

SCIENCE ABSTRACTS.

INDEX TO VOL. XVII.

1914.

SECTION A.—PHYSICS.

Price 1s. 6d. or 40 cents net.

(Free to Annual Subscribers.)

LONDON :

E. & F. N. SPON, LTD., 57, HAYMARKET, S.W.

NEW YORK :

SPON & CHAMBERLAIN, 123, LIBERTY STREET.

NAME INDEX.

SECTION A.—PHYSICS.

[Names not followed by Titles are not Authors, but only names mentioned in Abstracts. The numbers refer to Abstracts; if the letter B follows a number the Abstract will be found in Section B under that number. An asterisk indicates remarks in a discussion.]

- Abbe, C., zodiacal light, 1219
 Abbot, C. G., 23, 417, 610; solar constant, 825
 Abbott, R. R., steel, 777
 Abegg, 1910
 Abney, W. de W., 645
 Abney, W. de W., & W. Watson, colour vision, 446
 Abonnenc, selenium, 1880
 Abraham, 849, 922, 956, 1106, 1408, 1797
 Abraham, H., 1774
 Abraham, H., A. Dufour, & G. Ferrié, electric wave propagation, 1720
 Abraham, M., light-pressure, 1516
 Abram, H. H., & T. M. Lowry, cadmium arc, 1827
 Ackermann, 1886
 Acree, S. F., & C. N. Myers, hydrogen electrode, 1170
 Adams, 1264
 Adams, E. P., Hall-effect, 971
 Adams, E. Q., & G. N. Lewis, quantum theory, 1091
 Adams, E. Q., G. S. Meikle, & I. Langmuir, heat-flow, 899
 Adams, Franklin-, 1814
 Adams, L. H., interpolation formula, 3; thermo-elements, 1117
 Adams, L. H., & J. Johnston, vulcanism, 1952
 Adams, W. S., 31, 45, 1829; stellar spectra, 832
 Adams, W. S., & H. G. Gale, spectra, 81
 Adams, W. S., & J. B. Lasby, Nova, 421
 Afanassieff, A., & D. Roschdestwensky, spectra, 73
 Airey, Morris-, H., & S. H. Long, colloidal metals, 361; colour-sensitised plates, 210
 Airy, 1048
 d'Albe, E. E. Fournier, optophone, 337, 1501; selenium, 209
 Albert, [Mlle.] A., 1145
 Albert, [Mlle.] A., & C. E. Guye, magnetisation, 550
 Albert, [Mlle.] A., & A. Schidlof, hysteresis, 1145
 Aldis, 1043
 Aldrich, 417
 d'Alembert, 924
 Alibrandi, P., liquid flow, 1788
 Allen, A. O., planimeter, 1178
 Allen, H. S., passivity, 1646
 Alliston, N., aural illusion, 919
 Almansi, E., gravitation, 1790; immersed bodies, 1789
 Altberg, W., ionisation, 126
 Alterthum, 699
 Amagat, 267, 539, 1999
 Amberger, 1748
 Amedeo, R., weldability, 990
 Amerio, A., magnetisation, 340
 Ames, 1831
 Ames, J. S., H. Buisson, F. Paschen, & H. Kayser, secondary standards, 856
 Amsler, 1178, 1471
 v. Anderkő, A., earth's heat, 405
 Andersen, E. B., nebula, 199
 Anderson, 58
 Anderson, E. M., optics, 1508
 Anderson, S. H., 525
 Anderson, V. G., nitric acid in rain, 1802
 Andrade, E. N. da C., 1544; flow in metals, 1779
 Andrade, E. N. da C., & E. Rutherford, reflected γ -rays, 254, 1543
 Andrade, J., chronometry, 806
 Andrejew, J. J., 1360
 Andrew, G. W., water-gas equilibrium, 1358

- Andrew, J. H., 1917 ; embrittling iron, 1462 ; hardness, 1351
 Angenheister, 1905
 Angenheister, G., magnetic disturbances, 973
 Ångström, 25, 371, 1965
 Ångström, A., 1800 ; earth radiation, 23 ; radiation to space, 606
 Ångström, A. K., reflection, 207, 840
 Antonoff, G. N., 488, 1546 ; uranium Y, 102
 Applebey, M. P., viscosity, 1357
 Applebey, M. P., & D. L. Chapman, latent heat, 1286
 Appleyard, R., 150 ; demonstration model, 1648
 Arago, 1540
 Arisz, L., Tyndall phenomenon, 434
 Arkadief, W., diffraction, 64 ; electric waves, 731 ; ferro-magnetics, 558, 753, 1338
 Arnaud, C., refraction, 830
 Arnò, R., telephonic galvanometer, 1205B
 Arnold, 1465
 Arnolds, R., spectra, 1068
 Arpi, R., viscosity, 596
 Arrhenius, S., 55, 785 ; conductivity, 1011 ; dissociation, 1639
 Arrivaut, G., Mn-Ag alloys, 774
 Arsem, 1992
 Ashman, G. C., 480
 Ashton, A. W., dielectrics, 709
 Ashworth, J. R., magnetism, 1135
 Assmann, 403
 Asteroth, P., 553
 Aston, F. W., micro-balance, 587
 Aten, A. H. W., & A. Smits, allotropy, 1762
 Aubert, M., & A. Guillet, capacity coefficients, 122
 Auerbach, F., hydrogen electrode, 1025*
 Austin, L. W., arc *v.* spark signals, 236B ; h.f. resistance, 815B
 Avogadro, 180, 1634
 d'Azambuja, L., 865
 d'Azambuja, L., & H. Deslandres, solar atmosphere, 38 ; spectra, 237 ; Zeeman-effect, 468, 864
 Back, E., 659, 662, 1256
 Bacon, C. W., R. H. White, & M. A. Rosanoff, vapour pressures, 1852
 Bädcker, K., 1910
 Baedeker, K., & W. Vehrigs, thermoelectrics, 1729
 Baerwald, 1748
 Baerwald, H., canal-rays, 527
 v. Baeyer, O., 77, 127, 284, 1839
 v. Bahr, E[va], 456 ; light absorption, 463 ; quantum theory, 1858
 v. Bahr, E[va], & J. Franck, ionisation, 933
 Baillaud, J., colour screens, 442 ; time-signals, 1939
 Baillaud, R., astrolabe, 1234
 Bairsto, G. E., contact with dielectrics, 150
 Bairstow, 2028
 Bairstow, L., & E. W. Stedman, struts, 1781
 Baker, 1901
 Baker, G. S., 814
 Baker, H. B., & R. G. Strutt, active nitrogen, 979
 Baker, H. B., E. Tiede, R. J. Strutt, & E. Domcke, active nitrogen, 1624
 de Ballore, de M., seismology, 612
 Balmer, 14, 226, 477, 810, 1056, 1059, 1070, 1244, 1245, 1247, 1680, 1831
 Baly, E. C. C., fluorescence and light absorption, 1258 ; photochemical equivalent, 221
 Bancelin, J., adsorption, 1930
 Bancroft, W. D., electrochemistry of light, 213 ; osmosis, 1466
 Bancroft, W. D., & H. B. Weiser, flame reactions, 1005, 1467
 Bardet, 981
 Barker, H. C., 1120
 Barkla, 677, 1031, 1837
 Barkow, E., meteorology, 1382
 Barlow, 554
 Barnard, E. E., dark regions in sky, 631 ; variable star, 49
 Barnes, 1951
 Barnett, S. J., rotating magnets, 555 ; unipolar induction, 115
 Barratt, T., heat conductivity, 1991
 Barrett, 956
 Barrett, H. G. S., VV Aurigæ, 1816
 Barss, W. R., 716
 Bartell, F. E., negative osmose, 1929
 Bartoli, 440
 Barton, E. H., 734, 916, 921 ; electric oscillations, 734
 Barton, E. H., & W. B. Kilby, electric oscillations, 329
 Barus, C., electrometry, 544 ; interferometer, 1974 ; pendulum, 1179 ; reflection, 431
 Baskov, A. V., & N. A. Puschin, conductivity, 1724
 Bateman, H., 98 ; corpuscular radiation, 925 ; electromagnetics, 708
 Bates, S. J., & G. W. Vinal, Ag voltmeter, 1608
 Bauer, 1264, 1743
 Bauer, E., radiation law, 508
 Bauer, L. A., 973, 1905 ; magnetic appliances, 1621
 Bauer, L. A., & J. A. Fleming, C.I.W. deflector, 1147
 Bauer, L. A., & W. J. Peters, magnetic declinations, 1149
 Bauer, O., brittleness, 775

- Bauer, O., & E. Heyn, bearing metals, 994
 Baule, B., heat conduction, 1308
 Baumhauer, H., 2018
 Baxandall, F. E., α Andromedæ, 1394 ; star spectra, 624, 1228
 Beattie, 1869
 Beattie, R., field standard, 1893
 Beatty, R. T., X-rays, 245
 Beaufort, J., finding harmonics, 1181
 Beaulard, 143
 Beauvais, G., time determination, 1477
 Becker, A., 126
 Becker, E[mma], rotating e.s. field, 120
 Becker, G. F., 1785 ; rock density, 1784
 Beckmann, 1850
 Becquerel, 517, 1712, 1713
 Bedreag, C. G., electrification, 1580
 Beer, 227
 Beer, P., & K. Fajans, thorium series, 481
 Behacker, M., planetary motions, 619
 Behn, U., 1559
 Beilby, G. T., film on metals, 1373
 Bell, L., colour vision, 1520
 Bellati, M., & S. Lussana, passage of H through Fe, 176
 Bélopolsky, A., 624 ; star spectrum, 52
 Belot, E., ocean formation, 823, 1496 ; planetary systems, 620 ; zodiacal matter, 417
 van Bemmelen, W., 973 ; air records, 1033
 Bemporad, 415
 Bender, R., 1502
 Benedicks, 354, 699, 782, 1351, 1894, 1914, 1917, 2025
 Benedicks, C., Planck's law, 113
 Bengough, G. D., & R. M. Jones, metal corrosion, 1457
 Benndorf, H., Dorno, Hess, v. Schweidler, & T. Wulf, penetrating radiation, 931
 Bennett, C. W., & C. O. Brown, Cu refining, 585
 Bennett, C. W., & A. W. Davison, electrolysis, 1766
 Bennett, C. W., H. C. Kenny, & R. P. Dugliss, electrolysis, 1362
 Benoist, 1342, 1743
 Benoist, L., & H. Copaux, automatic weights, 1152 ; X-ray transparency, 869
 Berek, M., & F. Jentzsch, monochromator, 837
 Berger, A., units, 179
 Berget, A., sounding instrument, 1363
 Berggren, B., surface tension, 1210
 Bergholm, C., refraction, 643
 Bergwitz, K., 515 ; penetrating radiation, 492, 888* ; Rb rays, 92
 Berkeley, 769
 Berl, E., 1361
 Bernard, V., & L. Guillet, bronzes, 1348 ; case-hardening, 2020
 Bernini, A., flame ions, 518
 Bernoulli, 98, 599
 Berthelot, 269, 571, 691, 1559
 Bessel, 1660
 Besson, L., condensation, 283
 Bestelmeyer, A., 922
 Bethenod, J., electromagnetics, 334
 Betts, 794
 Bianu, B., α -particles, 1542
 Bidwell, C. C., emissivity, 1563 ; thermoelectrics, 1118, 1602
 Bielecki, J., 74
 Bigelow, F. H., solar constant, 1808
 Bigourdan, G., micrometer screw, 799 ; nebulae, 56
 Bijl, 1116
 Biles, 1476
 Bilham, E. G., spectrum, 1983
 Billon-Daguerre, L. Medard, & V. Fontaine, mercury lamp, 548
 Bingham, E. C., 798, 1357 ; fluidity, 2037
 Binghinotto, M., & T. Gnesotto, Bi amalgams, 757
 Biot, 2016
 Bird, R. M., & S. H. Diggs, precipitation by phosphorus, 1920
 Birge, E. A., light-absorption, 27
 Birge, R. T., spectrum, 656
 Birkeland, 22, 973 ; sun's magnetism, 615
 Biske, F., eclipses, 37 ; grating, 1045
 Bissett, C. C., & W. E. S. Turner, solvent power, 2032
 Bitner, R. E., R. B. Fehr, & W. R. Ham, light-absorption, 1963
 Bjercknes, C. A., 1790
 Bjercknes, V., 1790
 Bjerrum, 456, 463, 1170, 1282
 Blair, W. R., free air data, 826
 Blake, F. C., & C. Sheard, Lecher system, 1106
 Blake, G. G., & E. A. Owen, reflected X-rays, 681
 Blanc, A., phosphorus radiation, 1842
 Blanc, M. Le, passivity, 1646
 Bloch, 450
 Bloch, E., 1575
 Bloch, E., & L. Bloch, spectra, 1067, 1254, 1420
 Bloch, L., & E. Bloch, spectra, 1067, 1254, 1420
 Block, H., nebulae, 55
 Blom, C. E., atomic frequency, 699
 Blondlot, 926
 Blow, A. M., bronzes, 1629
 Blumenfeld, J., & G. Urbain, spectrum, 1834
 Boas, H., tungsten spark-gap, 739B
 Bodareu, E., compressibility, 1167 ; dielectrics, 539

- Bodareu, E., & A. Occhialini, dielectrics, 1129
 Bönicke, 1793
 Bogitch, B., alloys, 2023
 Boguslawski, S., pyro-electricity, 1601, 1886; yttrium platinocyanide, 1977
 Bohr, N., 225, 252, 341, 460, 467, 475, 477, 665, 667, 866, 1031, 1032, 1056, 1086, 1196, 1245, 1246, 1247, 1425, 1480, 1664, 1680, 1832, 1985; constitution of atoms, 15, 811; Zeeman-effect, 1070
 Bohr, N., & A. Fowler, He spectrum, 226
 Bohr, N., & H. Moseley, X-ray spectra, 476
 Bois, Du, 752
 de Boissoudy, J., 508
 Boizard, G., Kohlrausch's law, 784
 Bokhorst, S. C., A. Smits, & J. W. Terwen, vapour pressure, 1554
 Bole, G. A., & J. L. R. Morgan, drop-weights, 186
 v. Bolton, W., 2021
 Boltzmann, 440, 505, 701, 912, 1851
 Bolza, H., M. Born, & T. v. Kármán, molecular flow, 17
 Bon, G. Le, relativity, 1482
 Bonazzi, O., Hall-effect, 1329
 Bonch-Bruevich, M., discharge, 1439
 Bone, 1857
 Bonnerot, S., 176
 Bonnerot, S., & G. Charpy, iron nitride, 1463
 Boon, J. R., electric wind, 137
 Bordier, 1743
 Bordoni, U., thermoelectrics, 156
 Borelius, G., electrolyte potential, 1171
 Borisow, P., spectra, 469
 Born, M., 266, 813, 904, 905, 1509, 1565; diamond, 1381; specific heats, 913
 Born, M., H. Bolza, & T. v. Kármán, molecular flow, 17
 Born, M., & R. Courant, surface tension, 19
 Borrelly, nebula, 634
 v. Bose, 772
 Bose, Rankine-, 2001
 Bosler, J., comet, 196
 Bouchet, L., elasticity, 1377, 1778
 Boulanger, 981
 Boulengé, 5
 Boulgakov, N. A., 1104
 Boulouch, dioptric systems, 1980
 Bourbon, A., 1756
 Bourcier, F., Hertz waves, 1721
 Bourget, 1480
 Bourget, H., H. Buisson, & C. Fabry, nebula, 1401, 1819
 Bourrières, F., Brownian motions, 182
 Bousfield, W. R., 374; dilution law, 2038; osmosis, 1934, 2034; osmotic pressure, 1633
 Boussinesq, J., 823, 1658, 1994; filtration, 1943, 1945; transpiration of gases, 1944
 Boutaric, A., light-polarisation, 1964; solar constant, 407, 1809
 Bouty, L., gas theory, 911
 Bower, W. R., optics, 1674
 Bowie, W., isostasy, 1794
 Boyle, 288, 787
 Boys, C. V., micro-telescope, 836
 Braak, 108
 Braak, C., cloud, 1798
 Brabbée, 1657
 Brace, 1237
 Bradbury, W. A., rusting, 999
 Bradshaw, L., H. B. Dixon, & C. Campbell, ignition-points, 1854
 Bragg, 243, 258, 467, 712, 872, 1098, 1422, 1539, 1542
 Bragg, W. H., 254, 479, 876, 1262, 1281, 1421; reflected X-rays, 86, 1840; X-ray spectra, 880, 1265; X-ray spectrometry, 672, 1541
 Bragg, W. L., 86, 254, 479, 1079, 1265, 1381, 1421; crystal structure, 87, 876; structure of Cu, 1908
 Braun, 340, 543
 Braun, F., wireless, 812B
 Bravaix, 448, 1411
 Bray, W. C., & C. A. Kraus, conductance, 785
 Brazier, C. E., & R. Dongier, crystal detector, 292
 Bredig, 361, 368
 Bresciani, U., & R. Nasini, superfusion, 1280
 Bridgman, P. W., high-pressure apparatus, 804; phase-change by pressure, 1630; phosphorus modifications, 1745; thermodynamics, 1285
 Brillouin, 387
 Brillouin, L., heat conductivity, 1558; light propagation, 63; light scattering, 1414
 Brillouin, M., 1558; sound, 299
 Brinell, 778, 993, 1351, 1465, 1780
 Broca, A., & C. Florian, level determination, 589
 Brodsky, J., 1712
 Brodsky, J., & A. Goldmann, Becquerel-effect, 1712
 Bródy, I., thermodynamics, 1435
 van den Broek, A., 475, 568, 1031, 1246; atomic structure, 812, 1480; electrons, 1090; γ -rays, 1544; intra-atomic charge, 567, 569; radio-activity, 1687
 Brönsted, J. N., 1636; calculation of e.m.f.'s, 1022
 de Broglie, M., 1988; reflected X-rays, 243, 244, 483, 670, 675, 878, 1080; secondary X-rays, 1538, 1837, 1838

- de Broglie, M., & F. A. Lindemann, reflected X-rays, 676 ; X-ray spectra, 1263
- Broniewski, W., 1894, 2015
- Brooks, 143
- Brooks, H. B., instrument transformers, 1180B
- Brotherus, H. V., 1066, 1250
- Brown, 127, 180, 182, 636, 1202
- Brown, C. O., & C. W. Bennett, refining Cu, 585
- Brown, F. C., electron atmospheres, 147 ; Hg-vapour and Se, 146 ; selenium, 1879
- Brown, F. C., & L. P. Sieg, selenium, 1442 ; 1878
- Brown, S. G., 290 ; depolarisation, 1641
- Brown, S. L., thermo-electrics, 1119
- Brown, W., magnetostriction, 1332
- Brown, W., & J. Smith, torsion, 1027
- Brückner, 1801
- Bruевич, Bonch-, M., discharge, 1439
- Bruhat, G., optical rotation, 1521, 2016
- Brun, A., 26
- Brunetti, R., spectrum, 1984
- Brunt, D., solar phenomena, 32
- Brush, C. F., gravitation, 1949
- de Bruyn, C. A. L., & A. Smits, critical point, 1018
- Bryan, G. H., pianoforte touch, 301
- Bryant, W. W. & S. Chapman, magnetometer suspensions, 377
- Buchanan, J. Y., density, 374
- Bucherer, A. H., 922, 1797
- Buchwald, E., grating, 1044
- Buck, D. M., copper in steel, 1919
- Bucky, G., radiodosemeters, 975 ; radiography, 974
- Budde, E., units, 179
- Büchner, 92
- Buff, 517
- Bugnion, 1511
- Buisson, H., 80, 1239, 1240, 1480
- Buisson, H., H. Bourget, & C. Fabry, nebula, 1401, 1819
- Buisson, H., & C. Fabry, Doppler-effect, 1405
- Buisson, H., F. Paschen, J. S. Ames, & H. Kayser, secondary standards, 856
- Bulgakov, N., inductances, 237B ; oscillation circuits, 535
- Bulle, F., critical data, 275
- Bumstead, H. A., 255
- Bunsen, 1066, 1555, 1581
- Bunsen-Roscoe, 1264
- Burbridge, H. C., contact e.m.f., 540
- Burgess, G. K., 2021
- Burgess, G. K., & J. J. Crowe, critical ranges of Fe, 1003
- Burgess, G. K., & I. N. Kellberg, resistance of pure Fe, 1883
- Burgess, G. K., & P. D. Sale, purity of Pt, 1625
- Burgess, G. K., & R. G. Waltenberg, melting-points, 1995
- Burgess, M. J., 1281
- Burkser, E., & S. M. Tanatar, chemical reactions, 1747
- Burns, K., 855, 1831, 1983 ; Fe spectrum, 80, 857
- Burrard, 1194
- Burrows, 1613
- Burson, V., & H. Deslandres, carbon spectra, 1086 ; Zeeman-effect, 662
- Burton, C. V., gravitation, 1660 ; matter and ether, 1796
- Busch, H., light-pressure, 1513
- Buss, A. A., sun's axis, 410
- Butterworth, S., vibration galvanometers, 1732
- Byvoet, J. M., & R. Sissingh, reflection, 1973
- Cabrera, B., & E. Moles, magnetochemistry, 561
- Cabrera, B., E. Moles, & J. Guzman, magneto-chemistry, 1339
- Cady, H. P., & H. O. Lichtenwalter, conductivity, 786
- Cady, W. G., iron arc, 142
- Caldwell, E. W., 977
- Calhane, D. F., 1362
- Calhane, D. F., & T. C. Wheaton, electro-analysis, 791
- Callendar, 690
- Callendar, H. L., 694, 1081, 2034 ; ice calorimeter, 895* ; radiation, 1550 ; radiation-pressure, 439, 440 ; specific heat, 286
- Callendar, H. L., & A. N. Shaw, Weston cell, 1324
- Callier, A., photography, 211 ; prism, 57
- Campbell, A., vibration galvanometers, 1327
- Campbell, C., L. Bradshaw, & H. B. Dixon, ignition-points, 1854
- Campbell, C., W. E. Slater, & H. B. Dixon, explosions, 1857
- Campbell, L. L., kathode disintegration, 1874
- Campbell, N., δ -rays, 255, 490 ; discharge, 522 ; xylol resistance, 743
- Campbell, W. W., 43 ; star atmospheres, 1959 ; star velocities, 1500
- Campbell Swinton, A. A., gramophone, 290
- Campetti, A., specific heats, 1278
- Campion, A., & J. M. Ferguson, fracture sections, 1162
- Canac, F., crystallography, 1825
- Canac, J., & E. Tassilly, electrolysis, 790
- Cannevel, E., lighthouse mirrors, 1235

- Capon, R. S., binary stars, 1815
 Cardoso, E., critical constants, 278
 Carlo, E., photometry, 1407
 Carman, 1651, 1652
 Carnot, 55, 439, 440, 1550
 Carpenter, H. C. H., & C. A. Edwards, hardening, 1758
 Carpenter, H. C. H., & J. E. Stead, electrolytic Fe, 355
 Carrington, 409
 Carse, G. A., & G. Shearer, air potentials, 1095
 Carvalho, J., photoelectrics, 1725
 Cavallaro, V., & M. La Rosa, photoelectrics, 129
 Cederberg, I. W., 1693; vapour pressure, 1694
 Cedarstrand, S. G., binary stars, 425
 Cegielskij, R., 980
 Cereski, 1398
 Cermak, P., Peltier-effect, 957
 Chabaud, 1449
 Chadwick, J., β -rays, 1426
 Chadwick, J., & A. S. Russell, γ -rays, 489
 Chamberlain, 1495
 Chambers, W. F. D., & I. G. Rankin, reflected X-rays, 1989; X-rays, 1841
 Chapman, A. K., spectrum, 1678
 Chapman, D. L., & M. P. Applebey, latent heat, 1286
 Chapman, S., earth's magnetism, 2011; light of stars, 1817; terrestrial magnetism, 350, 1903
 Chapman, S., & W. W. Bryant, magnetometer suspensions, 377
 Chapman, S., & P. J. Melotte, star counts, 1814; star magnitudes, 625; stellar photometry, 626
 Chappuis, 1081
 Charlier, C. V. L., nebulae, 423; refraction, 416; star motions, 43
 Charpy, G., 176, 994, 1894; fragility in iron, 997
 Charpy, G., & S. Bonnerot, iron nitride, 1463
 Charpy, G., & A. Cornu, carbon in iron, 778; metal deformation, 1653; shock testing, 1182
 Chassigny, 956
 le Chatelier, 1637, 1894, 1917, 2025
 le Chatelier, A., 997
 le Chatelier, H., 1912
 Chattock, A. P., 1103
 Chauvin, H., & E. Gerard, radioactivity, 687
 Chazal, P. M., & J. L. R. Morgan, drop-weights, 1013
 Chevalier, St., star photographs, 632
 Chevenard, P., dilatation, 1845; Ni steels, 2027
 Child, C. D., 518; Hg-arc, 320; ionisation, 943
 Chree, C., 1619; magnetic disturbances, 1905; terrestrial magnetism, 349; 27-day period, 1904
 Chrétien, H., astrolabe, 1402; star clusters, 633
 Christen, 1743
 Chu, V. G., & E. K. Strachan, conductance, 1933
 Chwolson, 25
 Cisotti, U., liquid flow, 600
 Civita, Levi, T., heat theory, 1290
 Clapeyron, 108, 907, 2001
 Clarke, H. T., A. W. Stewart, & J. Stark, light-absorption, 652
 Claude, A., 613, 1402, 1720, 1940
 Claude, A., & L. Driencourt, micro-meter, 177
 Claude, G., drying air, 276; gas absorption, 1154; neon tubes, 940
 Clausen, W., conductivity, 2035
 Clausius, 108, 907, 2001
 Clausius, Mossotti-, 1316, 1601
 Clay, 1503
 Clay, J., 269
 Cleland, Mc, N. P., fluorescence, 1074, Clément, 1996
 Clerici, 1503
 Clerk, 1692
 Clevenger, G. H. & M. L. Hall, electrolysis, 792
 Clevenger, G. H., & B. Ray, Cu in steel, 779
 Cloarec, C., surface tension, 598
 Coblentz, W. W., 748, 901; black-body radiation, 901; radiometry, 695; selective radiation, 208; thermopiles, 737
 Coblentz, W. W., & C. Leiss, radio-meter, 639
 Cochrane, C., & R. A. Houstoun, light-absorption, 71
 Coehn, A., 1173
 Coehn, A., & H. Mozer, contact-electricity, 1322
 Cohen, E., metastability of metals, 987
 Cohen, E., & W. D. Helderman, allotropy of Cd, 772, 1763; allotropy of Cu, 986; allotropy of Zn, 992, 1911
 Cohen, L., oscillation transformer, 120B
 Coker, E. G., stress measurement, 383
 Collet, P., crystal resistance, 1598
 Colley, A. R., 324, 526; electric dispersion, 323; electric spectrum, 949
 Collie, J. N., 1715; production of rare gases, 1716
 Collins, H., structure of elements, 1168
 Colonnetti, G., elasticity, 1369
 Compton, K. T., 318, 1100, 1576, 1585, 1712
 Compton, K. T., & O. W. Richardson, photoelectrics, 314

- Compton, K. T., & O. Stuhlmann, Jr., photoelectrics, 127, 317
 Comte, 730
 Conway, A. W., spectra, 458
 Cook, G., elasticity, 1652
 Cooke, H. L., & O. W. Richardson, thermionics, 133
 Cooksey, C. D., 1260
 Coolidge, 1742
 Coolidge, W. D., 1578; X-ray tube, 564
 Cooper, C., J. Jacobs, & H. F. Coward, gas ignition, 1282
 Copaux, H., & L. Benoist, atomic weights, 1152; X-ray transparency, 869
 Corbino, O. M., 754, 971; specific heat, 106; Stark-effect, 1419
 Cornelius, 1100, 1576
 Cornu, 447, 1806
 Cornu, A., & G. Charpy, carbon in iron, 778; metal deformation, 1653; shock testing, 1182
 Cortie, A. L., magnetic storms, 167; Nova, 45
 Costantin, R., emulsions, 1634, 2033
 Costanzi, 1946
 Cotton, 182, 545, 1536
 Cotton, A., H. Mouton, & P. Drapier, magneto-optics, 215, 459
 Coudres, Des, 1264, 1301
 Coulomb, 970, 1187
 Coulson, J., time-interval measurement, 1650
 Courant, R., & M. Born, surface tension, 19
 Coursen, W. A., 1156
 Coursey, P. R., crystal detectors, 1315
 Coward, 1281
 Coward, H. F., C. Cooper, & J. Jacobs, gas ignition, 1282
 Crafts, J. M., vapour pressures, 500
 Cramp, W., air-flow, 1657
 Crandall, I. B., reflection, 449
 Cranz, C., & B. Glatzel, photographing explosions, 1190
 Credner, F., resistance changed by tension, 1124
 Crehore, 5
 Crehore, A. C., string galvanometer, 1734
 Crew, H., & G. V. McCauley, spectrum, 858
 Cripps, F. S., aero-dynamics, 1947
 Crofts, J. M., & H. B. Dixon, ignition-points, 1855
 Crommelin, C. A., vapour pressure of Ar, 272, 2001
 Crompton, 268
 Crookes, W., eye-preserving glass, 839; Si spectrum, 1835
 Crowe, J. J., & G. K. Burgess, critical ranges of Fe, 1003
 Crowe, J. J., H. C. Dickinson, & C. W. Waidner, temperatures near icebergs, 1951
 Crowther, J. A., 93, 1031, 1077
 Crowther, O. H., & F. C. Lea, elasticity, 1942
 Crowther, R. E., photography, 1968
 Croze, F., spectra, 655; Zeeman-effect, 659
 Crussard, L., inflammability, 696, 697
 Culver, C. A., wireless, 819B
 Curie, 163, 165, 343, 344, 345, 1135, 1139, 1141, 1142, 1444, 1896
 Curie, Mme. P., & H. K. Onnes, radiation of Ra, 96
 Curtis, W. E., spectrometry, 1831
 Curtius, 861
 Cuthbertson, C., 656, 1258
 Cuthbertson, C., & M. Cuthbertson, refraction, 61
 Cuthbertson, C., & A. W. Porter, refraction, 1273
 Cuthbertson, M., 1258
 Cuthbertson, M., & C. Cuthbertson, refraction, 61
 Czako, E., 889
 Dadourian, H. M., mechanics, 808
 Daguerre, Billon-, L. Medard, & H. Fontaine, mercury lamp, 548
 Dalton, J. P., comparing inductance with capacity, 1733; thermodynamics, 2003
 Daniell, P., & L. Föppl, rigid body, 813
 Daniels, F., I. H. Derby, & F. C. Gutsche, vapour pressures, 1853
 Dannecker, C., thermo-electrics, 956
 Danysz, J., β -rays, 486
 Darling, C. R., surface tension, 1208
 Darmois, E., & M. Leblanc, a.c. mercury arc, 589B
 Darrieus, G., kilowatt unit, 178
 Darwin, 413, 829, 1495
 Darwin, C. G., 97, 243, 254, 258, 481, 483, 872, 1031, 1079, 1425; α -particles, 1032; radiation-pressure, 439; reflected X-rays, 1079, 1262
 Darwin, G. H., 28, 1038
 Darwin, H., 1038
 Daubree, 1952
 Davey, W. P., Coolidge tube, 1742
 Davidson, G. F., fluid flow, 11
 Davies, H., 277, 279
 Davis, B., ionisation, 524
 Davison, A. W., & C. W. Bennett, electrolysis, 1766
 "Davon," 836
 Dawson, W. B., & K. Honda, tides, 1804
 Day, A. L., & E. S. Shepherd, magmatic gases 26

- Day, A. L., R. B. Sosman, & J. C. Hostetter, rock densities, 375
- Dean, G. R., problem of two spherical conductors, 1093; wireless, 1110, 1723
- Debye, 19, 244, 880, 902, 923, 1084, 1381, 1414, 1423, 1509, 1739, 1846
- Debye, P., 285, 288, 312, 870, 875, 904, 1558, 1691, 1840; electric dispersion, 526; reflected X-rays, 478, 1078
- Debye, P., & J. Kern, acoustics, 1565
- Décombe, L., atom's viscosity, 389; Siemens-effect, 900
- De Donder, T., & O. De Ketelaere, gravitational field, 1481
- Deeley, R. M., & P. H. Parr, glacier, 611
- Defant, A., sun's energy, 610
- Defretin, A., magnetisation, 1614
- Déguisne, C., X-ray coils, 1744
- Dehlinger, W., dispersion, 1509
- Dejean, P., ferro-magnetism, 758
- De Ketelaere, O., & T. De Donder, gravitational field, 1481
- Delauney, J., satellite orbits, 1813
- Denis, tool steels, 1759
- Derby, I. H., F. Daniels, & F. C. Gutsche, vapour pressures, 1853
- Desch, C. H., metal solidification, 2031
- Des Coudres, 1264, 1301
- Deslandres, 78, 656, 1254
- Deslandres, H., 865; sun, 195, 1386
- Deslandres, H., & L. d'Azambuja, solar atmosphere, 38; spectra, 237; Zeeman-effect, 468, 864
- Deslandres, H., & V. Burson, carbon spectra, 1986; Zeeman-effect, 662
- Deslandres, H., & A. Perot, powerful electro-magnet, 1136; obtaining intense fields, 752, 2010
- Desormes, 1996
- D'Esterre, C. R., nebulae, 424
- Dewar, J., 108, 657
- Dewrance, J., bronze, 1458
- Dhar, N., copper voltameter, 962
- Dickinson, H. C., J. J. Crowe, & C. W. Waidner, temperature near icebergs, 1951
- Dickinson, H. C., D. R. Harper, & N. S. Osborne, latent heat, 894
- Dickinson, H. C., & L. F. Mueller, calorimetric resistance thermometers, 893
- Dickson, T. W., & T. M. Lowry, rotatory dispersion, 1828
- Dieckmann, T., & S. Hilpert, Mn phosphides, 1139
- Diesselhorst, 328, 332, 1082
- Dieterici, C., 1859
- Dietzius, R., pilot balloons, 189
- Diggs, S. H., & R. M. Bird, precipitation by phosphorus, 1920
- Dike, 127
- Dima, G. A., photoelectrics, 316; photo-electrons, 1585
- Dimmer, G., photopolarimeter, 447; thermometers, 495
- Dines, W. H., 1211; meteorographs, 1384
- Dippel, E., Heusler alloys, 553
- Dixon, H. B., 1281
- Dixon, H. B., L. Bradshaw, & C. Campbell, ignition-points, 1854
- Dixon, H. B., C. Campbell, & W. E. Slater, explosions, 1857
- Dixon, H. B., & J. M. Crofts, ignition-points, 1855
- de Doba, A. S., thermo-elasticity, 1379
- Dobson, G., atmospheric electricity, 1438, 2006
- Dodge, H. L., elasticity, 376
- Dörr, J. N., sound, 1295
- Domcke, E., active nitrogen, 1624
- Domcke, E., & E. Tiede, active nitrogen, 979
- Donaldson, 1081
- Donder, T. De & O. De Ketelaere, gravitational field, 1481
- Dongier, R., & C. E. Brazier, crystal detector, 292
- Donle, 1134
- Donnan, F. G., & G. M. Green, membrane potentials, 2039
- Doppler, 68, 661, 666, 1073, 1529, 1550, 1677, 1830
- Dorn, Lévy-, radio-dosemeters, 1342
- Dorno, C., atmospheric electricity, 515
- Dorno, C., Hess, v. Schweidler, T. Wulf, & H. Benndorf, penetrating radiation, 931
- Dorno, C., and J. Maurer, meteorology, 1034
- Dorsey, N. E., inclinometer, 1146
- Dove, 1043
- Drapier, P., 1337
- Drapier, P., & W. J. de Haas, magnetism, 1148
- Drapier, P., H. Mouton, & A. Cotton, magneto-optics, 215, 459
- Drecq, M., light emission, 1412
- Driencourt, L., 613, 1402, 1720, 1940
- Driencourt, L., & A. Claude, micro-meter, 177
- Driesen, J., Fe-C alloys, 1464
- Drucker, K., 784
- Drude, 143, 217, 305, 900, 1058, 1086, 1406, 1502, 1727, 1828
- Drude, P., 232, 754, 1107
- Duane, W., 486, 764
- Du Bois, 752
- Ducelliez, F., 1756
- Duclaux, 598, 1016
- Duclaux, J., quantum theory, 1551
- Duddell, W., arc model, 1131
- Dufay, 472

- Duffield, W. G., Novæ, 44
 Dufour, A., oscillograph, 1326
 Dufour, A., H. Abraham, & G. Ferrié, Hertz-wave propagation, 1720
 Dugliss, R. P., H. C. Kenny, & C. W. Bennett, electrolysis, 1362
 Dulong, 1152
 Dumas, 501
 Dumont, J., & P. Goerens, drawn bronze, 996
 Duncan, R. C., 848
 Duncan, R. W., 848
 Dunoyer, L., optical resonance, 217; resonance Na-lines, 859
 Dunoyer, L., & R. W. Wood, resonance Na-lines, 1239, 1240; resonance spectra, 1526; sodium D-lines, 1527
 Dupuy, E. L., magnetism, 1137
 Dupuy, E. L., & A. Portevin, thermoelectrics, 736
 Dushman, S., e/m determination, 1699
 Dyson, F. W., 624, 1831
 Dyson, F. W., & E. W. Maunder, sun's axis, 409
 Earhart, R. F., discharge, 1099, 1719
 Eastman, E. D., & J. H. Hildebrand, vapour pressures, 1998
 Ebert, 1865, 2006
 Eccles, W. H., 329, 734; dielectrics, 799*; h.f. ammeters, 1109
 Eddington, A. S., 1393; star distribution, 1392; stellar system, 630
 Eder, J. M., spectra, 76
 Edmunds, P. J., discharge, 1876
 Edmunds, P. J., & J. S. Townsend, discharge, 1595
 Edwards, C. A., 1351
 Edwards, C. A., & H. C. H. Carpenter, hardening, 1758
 Egerton, A. C. G., vapour pressure, 1283
 Eggert, A., specific heat, 1561
 Ehlert, 1038, 1495
 Ehrenfeld, 1173
 Ehrenfest, 1408
 Ehrenfest, P., 503, 1087, 1552; Boltzmann theorem, 912
 Ehrenfest, T., 1552; radio-activity, 98
 Ehrenhaft, F., electronic charge, 509, 1300, 1571
 Eiffel, 1946
 Einstein, A., 13, 68, 110, 115, 127, 165, 180, 221, 286, 288, 318, 346, 661, 699, 701, 922, 1087, 1381, 1414, 1416, 1481, 1482, 1509, 1576, 1739, 1797, 1910; gravitation, 395, 809
 Einstein, A., & A. D. Fokker, gravitation, 1193
 Einthoven, 545
 Eisenmann, K., state equation, 701
 Ekman, 29
 Elbert, J. J., & A. Stähler, nitrogen fixation, 1454
 v. Elissafoff, G., & H. Freundlich, valency, 766
 Ellenberger, 1013
 v. Elsner, G., meteorology, 1035
 Elster, J., 130
 Elster, J., & H. Geitel, charge of rain, 929; photoelectrics, 128; photometry, 842, 1871
 Emden, R., atmospheric radiation, 20
 Emrys-Roberts, E., & J. H. Shaxby, Brownian motions, 1202
 Endell, K., & H. Hanemann, cast metals, 2020
 Englund, C. R., electron atmosphere, 1125
 Eötvös, 18, 19, 268, 279, 788
 Epstein, P. S., light-pressure, 1408, 1515
 Erb, F., 1440
 Erochin, P., Zeeman-effect, 474
 Escher, W., specific heats, 264
 Esclangon, E., rainfall meter, 1364
 Esmarch, W., electric waves, 528
 Estanave, E., photography, 1504
 Ettingshausen, 754, 1120
 Eucken, A., 1087; adsorption, 1468; gas theory, 1434; spectrum, 456
 Eumorfopoulos, N., b.p. of sulphur, 1277
 Evans, E. J., 225, 1247; spectra, 225
 Eve, A. S., 1579; Edison-effect, 942; γ -rays, 883
 Everling, E., air potentials, 1094
 Evershed, J., 194, 1247, 1831, 1959; spectrometry, 854; sun's spectrum, 1223, 1388
 Evershed, J., & T. Royds, sun's rotation, 31
 Evershed, S., insulation resistance, 179B
 Everts, 264
 Eves, W., 898
 Ewald, P. P., reflected X-rays, 674, 1422, 1539
 Ewen, D., annealing iron, 1461
 Ewest, H., spectrophotography, 843
 Ewing, 1370
 Exner, 1928
 Exner, F., 78, 461, 1524
 Exner, F. M., meteorology, 605
 Fabry, 77
 Fabry, C., 1121, 1239, 1240, 1480
 Fabry, C., H. Bourget, & H. Buisson, nebula, 1401, 1819
 Fabry, C., & H. Buisson, Doppler-effect, 1405
 Fajans, K., 95, 99, 103, 487, 1480, 1751; radio-activity, 482
 Fajans, K., & P. Be er, Th-series, 481
 Fajans, K., & O. Göhring, Urx , 256

- Falck, E., 270, 271
 Faraday, 839, 1134, 1137, 1337, 1568
 Faris, 1905
 Farnau, E. F., luminescence, 473, 1685
 Farwell, H. W., electroscope, 1321; rainbow, 1956
 Farwell, S. P., corona, 1166B; discharge, 1718
 Fassbender, H., Heusler alloys, 1738
 Fassbender, H., & E. Hupka, skin effect, 396B
 Fassbender, H., & A. Wetthauer, objectives, 204
 Fath, E. A., nebulae, 1233
 Faust, O., electrolytic Cu, 1918; viscosity, 816
 Faye, 620
 Feddersen, 328
 Fedotieff, P. P., & W. Iljinsky, electrolysis, 2041
 Fehr, R. B., W. R. Ham, & R. E. Bitner, light-absorption, 1963
 Fehrle, K., unipolar induction, 510
 Fenninger, W. N., Hall-effect, 759
 Ferguson, A., surface tension, 181, 1655, 1656, 1793
 Ferguson, J. M., & A. Campion, fracture sections, 1162
 Ferguson, W. B., 1972; photography, 1054
 Ferrié, G., 1940
 Ferrié, G., A. Dufour, & H. Abraham, Hertz-wave propagation, 1720
 Féry, 57, 1556
 Féry, C., 1412; prism, 1236
 Fessenden, R. A., gyroscopic quanta, 1198; radio-therapy, 565
 Fessenkoff, B., comets, 1225; cosmic dust, 1390; reflection, 1965; sun, 411
 Filon, L. N. G., photo-elasticity, 1375
 Findlay, A., & O. R. Howell, solubility, 1631
 Finke, W., 1339
 Fischer, F., & E. Elöd, active nitrogen, 979
 Fischer, F., & O. Prziza, electrolysis, 1173
 Fisher, W. J., 387
 Fiske, A. H., & T. W. Richards, thermometry, 1085
 Fitzgerald, 644
 Fitzgerald-Lorentz, 1974
 FitzGerald, F. A. J., conductivity, 1726; furnace losses, 509B
 FitzGerald, F. A. J., & A. T. Hinckley, furnace electrodes, 40B
 Fizeau, 688
 Flajolet, P., cirrus cloud, 22; storm, 1213; terrestrial magnetism, 760
 Flamm, L., α -rays, 250
 Flamm, L., & H. Mache, RaEm, 247
 Fleck, A., 102, 488, 568; uranium X, 99
 Fleming, 1315, 1579
 Fleming, J. A., vibrating strings, 296
 Fleming, J. A., & L. A. Bauer, C.I.W. deflector, 1147
 Fleming, J. A., & J. A. Widmer, magnetometer, 1620
 Fletcher, A. L., micro-furnace, 573; Ra determination, 248
 Floch, Le, & Taffanel, gaseous combustion, 280
 Florance, D. C. H., 253; secondary γ -rays, 884
 Florian, C., & A. Broca, level determination, 589
 Flowers, A. E., crystal rectification, 1126
 Föppl, L., Bohr's atom, 1664; diamond, 984
 Föppl, L., & P. Daniell, rigid body, 813
 Förster, R., string galvanometer, 965
 Försterling, K., photography, 1505
 Foersterling, K., & V. Freedericksz, dispersion of Se, 1406
 Foëx, G., 1137, 1896; magnetism, 345
 Fokker, A. D., electro-dynamics, 1087; Brownian motions, 700
 Fokker, A. D., & A. Einstein, gravitation, 1193
 Fontaine, H., L. Medard, & Billon-Daguerre, mercury lamp, 548
 Foord, C. W. H., reed instruments, 921
 Forch, 1793
 Forcrand, 1637
 Forman, A. H., X-ray opacity, 1537
 Forrest, J. F., arc as standard, 106B
 Forsythe, W. E., and C. E. Mendenhall, black-body temperatures, 111; high-temperature measurements, 1851; melting-point of Mo, 112
 Fortin, 802
 Fortrat, R., 662, 864; Zeeman-effect, 240, 668, 865
 Foster, C., 1325
 Fouard, E., ionometry, 576
 Foucault, 444
 Foucault, Glan-, 1821
 Fourier, 1181
 Fournier, air-resistance, 1946
 Fournier d'Albe, E. E., optophone, 337, 1501; selenium, 209
 Fowle, F. E., 23, 417; atmospheric transparency, 1492; light-absorption, 432
 Fowler, A., 234, 1226, 1228, 1247; spectra, 225, 1680
 Fowler, A., & N. Bohr, spectra, 226
 Fraenkel, W., 1456
 Franck, J., 490, 933, 1196, 1714
 Franck, J., & E[va] v. Bahr, ionisation, 933
 Franck, J., & G. Hertz, ionisation, 310, 715, 1583, 1584
 Frankenberg, 12

- Franklin-Adams, 1814
 Franklin, W. S., 1564; fluid motion, 599
 Franz, 536, 1082, 1120
 Frary, F. C., 1174
 Fraser, 1934
 Fredenhagen, K., 125, 1867, 1873; heating up vapours, 692; light-absorption, 651; photoelectrics, 639, 717; Wehnelt electrode, 724
 Fréedericksz, V., 1185
 Fréedericksz, V., & K. Foersterling, dispersion of Se, 1406
 Freeman, A. W., solar halo, 1955
 Fresnel, 430, 1508, 1512
 de Freudenreich, J., magnetic alloys, 1891
 Freundlich, E., 846; light velocity, 66
 Freundlich, H., & G. v. Elissafoff, valency, 766
 Fridmann, A., & V. Smirnoff, discharge, 1104
 Friedel, G., reflected X-rays, 671, 879
 Friedmann, F., α -particles, 485
 Friedrich, W., 85, 431, 1539; reflected X-rays, 673, 872
 Fritsch, 438
 Fröhlich, 1135
 Frost, E. B., hydrogen line λ 4686, 1960
 Fuchs, 1104
 Füchtbauer, 527
 Füchtbauer, C., & W. Hofmann, spectra, 230, 669
 Füchtbauer, C., & C. Schell, spectra, 229
 Fuhrmann, 1946
 Fuji, K., & T. Mizoguchi, lava, 1276
 Fujiwhara, S., S. Maeda & Okada, seiches, 822
 Fulton, A. R., elasticity, 1782
 Fulton, C. H., 1156
 Furstenau, 1150
 Furuhielm, R., Capella, 831
 Gaede, W., air-pump, 796
 Gaiffe, 168
 Gale, H. G., 1829; earth's elasticity, 1495
 Gale, H. G., & W. S. Adams, spectra, 81
 Galli, 1676
 Gallus, A., & J. Koenigsberger, canal rays, 1872
 Gammage, A. L., 1362
 Gans, R., 1862; coercive force of Ni, 161
 Garbasso, A., 1245; Stark-effect, 666, 667, 1985
 Gardner, 588
 Garrett, A. E., 1869
 Gaubert, P., liquid crystals, 771
 Gaudechon, 571
 Gauss, 594
 Gebhardt, H., A. Gutbier, & B[erta] Ottenstein, occlusion, 1748
 Gehlhoff, G., 1310; noble gases, 171
 Gehlhoff, G. & F. Neumeier, conductivity, 536, 1443
 Gehrcke, 77
 Gehrcke, E., 1839; light-emission model, 1056, 1057; spectra, 1245
 Gehrts, A., 127, 1873; thermionics, 125
 Geiger, 104, 480, 827, 1032, 1269, 1429
 Geiger, H., 91, 252, 567, 881, 1031, 1268, 1269, 1559
 Geiger, L., 1069
 Geissler, 1592
 Geitel, H., 130
 Geitel, H., & J. Elster, charge of rain, 929; photoelectrics, 128; photometry, 842, 1871
 Gelbke, 74
 Gérard, E., & H. Chauvin, radio-activity, 687
 Gerdien, 1303, 1703; anemometer, 155
 Gerlach, W., & E. Meyer, point discharge, 139
 Gerlach, W., & F. Paschen, Stark-effect, 1534
 Germann, F. E. E., vapour pressure, 274
 Germann, F. E. E., and P. A. Guye, air analysis, 1924
 Gianfranceschi, G., 518; gravity, 594; sound recording, 917
 Gibbs, 1285
 Gibson, A. H., motion of bubbles, 601
 Gibson, A. H., & J. H. Thompson, "suction" between vessels, 187
 Giertsen, S., & B. Neumann, preparing Na, 1752
 Giessen, wind-pressure instrument, 1473
 Gingrich, C. H., star magnitudes, 197
 Giraud, F., hygrometry, 499
 Gish, O. H., reflection, 1502
 Glaisher, 403
 Glan-Foucault, 1821
 Glasson, J. L., 245; kathode rays, 948
 Glasunow, A., & M. Matweew, alloys, 993
 Glatzel, B., & C. Cranz; photographing explosions, 1190
 Glazebrook, R. T., aeroplane, 9108
 Glocker, R., reflected X-rays, 1421
 Glocker, R., & E. Wagner, X-rays, 873
 Gnesotto, T., & M. Binghinotto, Bi amalgams, 757
 Gnesotto, T., & V. Mattioli, Wiedemann-effect, 751
 Gockel, 259; penetrating radiation, 888*
 Goddard, R. H., cloud colours, 191; force on dielectric, 1860
 Godfrey, C., 296

- Godlewski, T., 887, 982; radio-active solutions, 1017, 1451
 Göhring, O., 99, 103; actinium, 1545
 Göhring, O., & K. Fajans, Ux_2 , 256
 Göpel, F., measuring machine, 1365; toothed wheels, 1366
 Goerens, P., steel, 781
 Goerens, P., & J. Dumont, drawn bronze, 996
 Goerz, 1043
 Goldstein, 941
 Goldstein, E., canal rays, 2007
 Gorczynski, L., solar radiation, 1807
 Gold, E., kite ascents, 1488
 Goldhammer, D. A., specific heat, 902
 Goldmann, A., Becquerel-effect, 1713
 Goldmann, A., & J. Brodsky, Becquerel-effect, 1712
 Goldschmidt, 144, 1750
 Goltze, F., magnetic testing, 518B
 Goodenough, G. A., steam, 1148B
 Gorbov, A. I., & V. F. Mitkevitch, nitrogen oxidation, 1452
 Gorke, H., 784
 Gorton, F. R., X-rays, 83
 Gottstein, G., Peltier-effect, 1120
 Goubau, R., melting-point of As, 896
 Gouy, G., 229, 1529; earth's atmosphere, 1215; solar atmosphere, 614; spectrum, 1251
 Gowdy, R. C., X-rays, 84
 Graham, 363
 de Gramont, A., spectrum, 464; ultimate lines, 1530
 Grant, K., 587
 Gray, 750
 Gray, A., dynamics, 595; permanent magnets, 1132; planetary motions, 41; rails and slider magneto, 1130; vortex motion, 1787
 Gray, A. H., & R. A. Houstoun, light-absorption, 70
 Gray, A. W., micrometer microscopes, 838
 Gray, J. A., γ -rays, 253
 Gray, J. G., 1447; gyrostats, 1649
 Gray, Whytlaw-, R., 587; radium D, 95
 Greaves, R. H., & A. A. Read, Cu-Al alloys, 1465
 Grebe, L., grating, 844
 Green, G., radiation, 1433
 Green, G. M., & F. G. Donnan, membrane potentials, 2039
 Green, W. L., 26
 Greene, C. W., Al rectifier, 1643
 Greenwood, 1992
 Greinacher, H., discharge, 130; discharge-lamp, 591B; oscillograph, 937; vibration electrometer, 546
 Grenet, L., 1351, 1760, 1894
 Griffith, 576
 Griffiths, E., ice calorimeter, 895; specific heat, 1083
 Griffiths, E., & E. H. Griffiths, specific heat, 1846
 Griffiths, E. H., & E. Griffiths, specific heat, 1846
 Gripenberg, W. S., selenium, 1599
 Grisson, 168
 Gross, T., electromagnetics, 1088
 Grossmann, radio-dosimeters, 1341
 Grossmann, F., 1594
 Grossmann, M., gravitation, 394
 Grottrian, O., 335
 Grottrian, W., spectra, 1528
 Grove, 365
 Grover, F. W., Fourier analysis, 385
 Grubb, 1043
 Grube, G., passivity, 1646
 Grüneisen, 688, 784
 Grünter, R., spectra, 78
 Grunmach, L., 396, 1331
 Gudima, A., V. Kutovski, & A. Schaposchnikow, nitrogen oxidation, 1453
 Gümbel, L., cavitation, 188
 Guglielmo, G., conical condenser, 1404; gratings, 1514; heat equivalent, 1996; Peltier-effect, 1317
 Guild, J., 1138
 Guillaume, 806
 Guillaume, E., light-velocity, 218
 Guillet, A., & M. Aubert, capacity coefficients, 122
 Guillet, L., alloys, 1159; Ni-Cr steels, 1002
 Guillet, L., & V. Bernard, bronzes, 1348; case-hardening, 2029
 Guldberg, 277, 381, 1009
 Gumlich, E., 1917; magnetometers, 1334; high inductions, 1333
 Guntz, 889
 Gutbier, A., H. Gebhardt, & B[erta] Ottenstein, occlusion, 1748
 Gutenberg, B., 1214; earth's interior, 824
 Guthrie, D. V., 1830
 Gutsche, F. C., I. H. Derby, & F. Daniels, vapour pressures, 1853
 Gutton, C., 1721; dielectrics, 926
 Guy, J. S., & H. C. Jones, spectra, 454, 862
 Guyau, A., 1610; oscillograph, 1731
 Guye, 1923
 Guye, C. E., 1145, 1185
 Guye, C. E., & [Mlle.] A. Albert, magnetisation, 550
 Guye, C. E., & [Mlle.] S. Vassileff, internal friction, 1185
 Guye, P. A., & F. E. E. Germann, air analysis, 1924
 Guyot, J., Volta-effect, 1885
 Guzman, J., E. Moles, & B. Cabrera, magneto-chemistry, 1339
 Gwyther, R. F., elasticity, 1661

- de Haas, W. J., 1337 ; resistivity, 1597
 de Haas, W. J., & P. Drapier, magnetism, 1148
 Haber, 1867
 Hackspill, L., alkali metals, 2015
 Hadamard, 180
 Hadfield, R. A., Mn steel, 358
 Hadfield, R., sound ingots, 1349
 Haga, H., & F. M. Jaeger, boracite patterns, 1261
 Hagen, 12, 594, 1563
 Hahn, O., 284, 887 ; γ -rays, 1428
 Hahn, O., & L. Meitner, radio-actinium, 104 ; Th γ -rays, 257 ; Ux_2 , 103 ; Uy , 1546
 Haidinger, 1242
 Hale, G. E., 615 ; sun's magnetic field, 34
 Hall, 114, 754, 759, 900, 923, 971, 1120, 1448
 Hall, M., zodiacal light, 1220
 Hall, M. L., & G. H. Clevenger, electrolysis, 792
 Hallermann, A., photoelectrics, 718
 Hallo, 229, 1069
 Hallström, W., arc in liquids, 319
 Hallwachs, 129, 718, 1712, 1713
 Hallwachs, W., 1306
 Hallwachs, W., & G. Wiedmann, photoelectrics, 722
 Ham, W. R., R. B. Fehr, & R. E. Bitner, light absorption, 1963
 Hamm, S., spectrum, 461
 Hammer, W., e/m determination, 1301
 Hampe, H., spectra, 1248
 Hampson, 1743
 Hamy, M., spectrograph, 203 ; star velocities, 627
 Hamy, M., & Millochau, spectrum, 1418
 Handovsky, H., & E. Wilke, Tyndall phenomenon, 437
 Hanemann, H., Fe-C alloys, 2026
 Hanemann, H., & K. Endell, cast metals, 2026
 Hanemann, H., & P. Merica, Cu-Al alloys, 1161
 Hanemann & Morawe, granular pearlite, 2030
 v. Hann, J., meteorology, 400
 Hanriot & Lahure, annealing, 989 ; cold work, 988
 Hansen, H. M., Zeeman-effect, 663
 Hargreaves, R., Wien's law, 1289
 Harker, J. A., electric emissivity, 1111 ; solar electricity, 36
 Harlow, F. J., dilatation, 1081 ; thermoluminescence, 721
 Harnack, A., moving mirror, 646 ; spectra, 1525
 Harper, D. R., N. S. Osborne, & H. C. Dickinson, latent heat, 894
 Harrison, 956
 Hartley, H., charging by combustion, 1318
 Hartley, W. N., 1530
 Hartmann, 79, 205, 1234
 Hartung, E. J., specific heats, 1849
 Harzer, P., H. Kobold, & O. Tetens, meridian circle, 800
 Hasbach, K., spectra, 1524
 Haschek, 78, 461, 1524
 Hasegawa, K. earthquakes, 406
 Hasenöhrl, 866
 Hassé, H. R., electro-dynamics, 707
 Hasselberg, 78, 461
 Hatfield, H. S., light integration, 1978
 v. Hauer, F., & J. v. Kowalski, luminescence, 1076
 Hauf, O., 1139
 Haughton, J. L., 1004
 Haughton, J. L., & W. Rosenhain, etching reagent, 1761
 Hauser, F., tensile tests, 378
 Hausknecht, P., & E. Wedekind, magnetic Ti compounds, 347
 Havelock, 227
 Havelock, T. H. ship resistance, 814
 Hayes, H. C., magnetisation, 1337
 Hayford, 1194, 1794
 Heaps, C. W., 1331
 Heck, R. C. H., steam, 68
 Hecker, 1038, 1214, 1495
 Heike, W., alloys, 1626
 Heimrod, G. W., decomposition in magnetic fields, 980
 Helderman, W. D., & E. Cohen, allotropy, 772 ; allotropy of Cd, 1763 ; allotropy of Cu, 986 ; allotropy of Zn, 992, 1911
 Heller, R., 168
 Hellmann, G., meteorology, 1212
 v. der Helm, R., 656
 Helmholtz, 10, 294, 916, 1285, 1671, 1923
 Helmholtz, Ketteler-, 1967
 Hempel, 1992
 Hemptinne, 1748
 Hemsalech, 1531
 Hemsalech, G. A., & R. W. Wood, fluorescence, 1987
 Henderson, J. B., motion through water, 603
 Hennig, R., frosts, 1383
 Henning, F., temperature scale, 694
 Henri, 221
 Henri, V., 74
 Henriot, 92
 Henry, A. J., meteorology, 402 ; Ohio floods, 1494
 Henschke, E., 1572
 Hepworth, M. W. C., Gulf Stream, 1493
 Hernqvist, E., heat conductivity, 497
 Hertwig, W., bridge methods, 742
 Hertz, 115, 534, 1110, 1714, 1722, 1723.

- Hertz, G., 490, 1196
 Hertz, G., & J. Franck, ionisation, 310, 715, 1583, 1584
 Hertzprung, 200, 1391
 Herweg, J., 872, 1266; reflected X-rays, 877
 Herz, G., 933
 Herzfeld, K. F., 485; electrons, 923; entropy, 505; Zeeman-effect, 866
 Hess, V. F., penetrating radiation, 259, 491; Ra measurements, 963
 Hess, v. Schweidler, T. Wulf, Dorno, & H. Benndorf, penetrating radiation, 931
 Heurck, Van, 642
 Heuse, W., 264, 690, 1561
 Heuse, W., & K. Scheel, dilatation, 688
 Heusler, 553, 1329, 1738
 v. Hevesy, valency, 982
 v. Hevesy, G., & F. Paneth, indicators, 579; polonium, 581; radio-elements, 582; RaD, 578
 Heycock, 776
 Heydweiller, A., 1015; atomic dimensions, 392; magnetic salts, 560; magneton, 348
 Heyn, E., & O. Bauer, bearing metals, 994
 Hicks, W. M., 457; α -rays, 1861
 Hiecke, R., relativity, 1483
 Higgins, E., 788
 Higgins, W. F., & G. W. C. Kaye, thermionics, 1707
 Hildebrand, 369
 Hildebrand, J. H., & E. D. Eastman, vapour pressures, 1998
 Hilpert, S., & T. Dieckmann, Mn phosphides, 1139
 Hinckley, A. T., & F. A. J. FitzGerald, furnace electrodes, 408
 Hind, 56
 Hindricks, 993
 Hinks, 49
 Hitchcock, C. N., polarisation potentials, 1765
 Hittorf, 978
 Hnatek, A., spectrograph, 1403
 Ho, H., & S. Koto, oscillograph, 547
 Hodgson, B., discharge, 728
 Hodgson, B., & P. A. Mainstone, discharge, 141
 Högelsberger, L., h.f. coupling, 1066B
 Hörig, H., thermo-electrics, 1116, 1603
 van't Hoff, 1634, 1923
 Hoffmann, 901
 Hoffmann, G., electrometer, 549; measuring capacity, 1323
 Hofmann, W., & C. Füchtbauer, spectra, 230, 669
 Hohenegger, C., & C. Paal, adsorption, 1746
 Holborn, 498
 Holborn, L., & M. Jakob, specific heat, 690
 Hollingworth, J., Bessel function, 4
 Holm, E., gas theory, 503; magnetism, 1336
 Holm, R., air-flow, 1188; discharge, 1591
 Holmes, A., thorium, 1275
 Holmes, H. N., electrostenolysis, 1937
 Holmes, J., intermiscibility, 1356
 Holt, A., occlusion, 1907
 Holtsmark, J., kathode rays, 1586
 Holzknecht, 1743
 Homén, 606
 Honda, K., 1137, 1447; magnetic effects, 1892; nomenclature, 1894
 Honda, K., & W. B. Dawson, tides, 1804
 Honda, K., & T. Matsushita, seiches, 1803
 Honda, K., & Y. Ogura, magnetisation, 1133
 Honda, K., & T. Soné, magnetics, 1895; thermomagnetics, 1897
 Honda, K., & H. Takagi, steel, 356
 Hopf, L., fluid flow, 1189
 Hopkinson, 514, 1894
 Hopkinson, B., 358, 1026, 1692; detonation, 380; impact pressure, 379
 Hopwood, F. L., thermionics, 1579
 Hopwood, F. L., & A. S. Eve, Fleming valve, 942
 Hornbeck, J. W., conductivity, 332
 Hornor, N[ellie] N., Wehnelt kathode, 521
 Horst, C., 2018
 Horton, F., 1099; discharge, 533; thermionics, 1708, 1867; Wehnelt kathode, 1873
 Hostetter, J. C., electro-analysis, 584
 Hostetter, J. C., R. B. Sosman, & A. L. Day, rock densities, 375
 Householder, F. F., electron atmospheres, 1881
 Houston, R. A., dispersion, 1519; light absorption, 72
 Houston, R. A., & C. Cochrane, light absorption, 71
 Houston, R. A., & A. H. Gray, light absorption, 70
 Howe, G. W. O., electric oscillations, 734; vibration galvanometers, 1327*; wireless, 1072B
 Howe, H. M., overstrain, 2028
 Howe, H. M., & A. G. Levy, elasticity, 1370
 Howell, J. T., grating, 1979
 Howell, O. R., & A. Findlay, solubility, 1631
 Howes, H. L., & E. L. Nichols, luminescence, 1684
 Hubrecht, 31

- Hufford, M. E., diffraction, 1540
 Hughes, 1576
 Hughes, A. L., contact p.d., 1884 ;
 photoelectrics, 966, 1100
 Hughes, H. G., & A. M. Tyndall,
 kathode disintegration, 1101
 Hulett, G. A., 1763
 Hull, 439, 440
 Hulshof, H., thermodynamics, 1927
 Humphreys, W. J., rainfall, 1665
 Hupka, E., 678, 878 ; reflected X-rays,
 679
 Hupka, E., & H. Fassbender, skin-
 effect, 396B
 Huppers, W., spectra, 79

 Idrac, P., terrestrial magnetism, 761
 Ignatieff, A., spectrometry, 1241
 v. Ignatowsky, W., grating, 1518
 Ihde, K., 1335
 Ikeuti, K., radio-activity, 686
 Iljinsky, W., & P. P. Fedotieff, elec-
 trolysis of Al, 2041
 Immelmann, radio-dosemeter, 1340
 Innes, R. T. A., star positions, 629
 Innes, Rose-, J., light-velocity, 644
 Inouye, 787
 Ionto, 1743
 Ishiware, J., electrodynamics, 1572,
 2005 ; light-quanta, 1981 ; relativity,
 1792
 Isitani, D., radio-activity, 261, 890
 Ivanov, K. I., Na spectrum, 1066 ;
 spectra, 1069
 Ives, H. E., photoelectrics, 1888
 Ives, J. E., radiation, 110
 Iwao-Robayashi, electric waves, 1594

 Jackson, J., satellite orbits, 829
 Jacobi, 413
 Jacobs, J., C. Cooper, & H. F. Coward,
 gas ignition, 1282
 Jacot, 483
 Jacot, E., & M. de Broglie, reflected
 X-rays, 483
 Jaeger, 1655
 Jaeger, F. M., surface tension, 1948
 Jaeger, F. M., & H. Haga, boracite
 patterns, 1261
 Jäger, G., capillarity, 397
 Jaeger, W., 332, 1082 ; Hg rectifiers,
 1887
 Jaeger, W., & H. v. Steinwehr, Ag
 voltameter, 1609 ; resistance units,
 152
 Jaffé, G., α -rays, 1270 ; ionisation, 321,
 740
 Jahn, H., 1173, 1317
 Jakob, M., & L. Holborn, specific
 heat, 690
 Jakovlev, K. P., radio-micrometer, 157
 Jamieson, A. D., 897
 Jamin, 61

 Janet, P., units, 307
 Janicki, L., wave-length standards,
 653
 Janka, 807
 Jannek, J., 1157
 Janss, S., coupled systems, 328
 Jaquerod, A., 108
 Jauncey, G. E. M., X-ray spectra,
 1266
 Jeans, J. H., 902 ; nebular theory, 413 ;
 quantum theory, 1549 ; radiation
 704 ; star-clusters, 833
 Jeffries, Z., electric furnace, 1156
 Jekhowsky, B., longitude difference,
 1940
 Jenkin, C. F., 703
 Jenkins, W. A., earth's field, 563 ; Hall-
 effect, 1615
 Jentzsch, F., microscope, 638
 Jentzsch, F., & M. Berek, monochro-
 mator, 837
 Jervis-Smith, F. J., 531
 Jochem, O., 2018
 Jörgenson, I., & D. W. Stuart,
 atmospheric potential, 1704
 Joffé, 1576
 Johansen, 737
 Johansen, E. S., 59 ; thermopiles, 748
 Johansson, 797
 John, C. E. St., sun-spots, 194, 412
 John, C. E. St., & L. W. Ware,
 spectrometry, 654
 Johnson, E., drawn brass, 1627
 Johnston, J., & L. H. Adams., vulcan-
 ism, 1952
 Johnstone, J. G., integrator, 1470
 Jolly, H. L. P., spectra, 231
 Joly, 689, 1272
 Joly, J., 889 ; deep-sea investigations,
 1216 ; radio-therapy, 1344
 Jones, C., 839 ; micrographic media,
 642
 Jones, E. T., induction-coil, 1314
 Jones, H. C., 784
 Jones, H. C., & J. S. Guy, spectra,
 454, 862
 Jones, H. S., star motions, 1400
 Jones, L. A., & P. G. Nutting, photo-
 meter, 1823
 Jones, L. T., e/m for kathode rays,
 1436
 Jones, R. L., galvanometer, 1128
 Jones, R. M., & G. D. Bengough,
 metal corrosion, 1457
 John, W. M., & J. E. Malam, Hall-
 effect, 1331
 Jordan, F. C., A. H. Pfund, and F.
 Schlesinger, λ Tauri, 422
 Jordan, F. W., thermo-galvanometer,
 1611
 Jouguet, E., 696 ; combustion waves,
 282
 Joule, 703, 900, 1846

- Jouniaux, A., & P. Pascal, density, 590
 Joye, P., spectra, 453
 Joyner, R. A., & W. A. Knight, amalgams, 1008
 Julius, W. H., Fraunhofer lines, 1957; photosphere, 33
 Juritz, 2015
 Just, 1867
 Kadesch, W. H., photo-electrons, 1576
 Kähler, K., emanation in soil-air, 685
 Kahlenberg, 786
 Kailan, A., action of Ra rays, 572; 574; action of u.v. light, 571
 Kalähne, A., coupled systems, 327; density, 591
 Kaländyk, S. J., conductivity, 1869
 Kandidof, P., electro-capillarity, 1319
 Kaneko, K., & R. Ruer, alloys, 755
 Kanolt, C. W., melting point, 1992
 Kapteyn, 1233
 Kapteyn, A., photography, 1053
 v. Karmán, T., 626, 904, 905, 1509
 v. Kármán, T., M. Born, & H. Bolza, molecular flow, 17
 Karpowicz, A., & A. Schidlof, Hg droplets, 1569
 Kauchtschev, M. & N. Puschin, yield of ozone, 1922
 Kaye, G. W. C., X-ray dosage, 1743*
 Kaye, G. W. C., & W. F. Higgins, thermionics, 1707
 Kayser, 457, 1068, 1524, 1680
 Kayser, H., J. S. Ames, N. Buisson, & F. Paschen, secondary standards, 856
 Keen, B. A., 1238
 Keen, B. A., & A. W. Porter, diffraction, 645
 Keene, H. B., 289, 678
 Keesom, W. H., 108, 165, 346; electrons in metals, 305; ferro-magnetics, 343, 344; magnetism, 1899; state equation, 288; thermodynamics, 908
 Keesom, W. H., & H. K. Onnes, vapour pressure, 108
 Kellberg, I. N., & G. K. Burgess, resistance of Fe, 1883
 Kelvin, 392, 706, 928, 1038, 1132
 Kendall, J., dilution law, 2036; liquids, 1009
 Kennard, E. H., 115
 Kennelly, A. E., & H. S. Sanborn, thermal convection, 1094
 Kenny, H. C., R. P. Dugliss, and C. W. Bennett, electrolysis, 1362
 Kent, 814
 Kent, N. A., Zeeman-effect, 1256
 Kepler, 66, 436, 619, 1660
 Kern, E. F., electrolysis, 793
 Kern, J., grating, 1049
 Kern, J., & P. Debye, acoustics, 1565
 Kerr, 3421
 Kerschbaum, F. P., Hg lamps, 938; interference, 1047
 Ketelaere, O. De, & T. De Donder, gravitation, 1481
 Ketteler, 1509
 Ketteler-Helmholtz, 1967
 Keys, D. A., & J. C. McLennan, ionisation, 520
 Kiebitz, F., magnetic coupling, 954; measuring coupling, 1066B
 Kienböck, 1341, 1342, 1743
 Kiess, C. C., comet, 1227; RR Lyræ, 1230
 Kilby, W. B., 734
 Kilby, W. B., & E. H. Barton, electric oscillations, 329
 Kilchling, K., optical electrons, 647
 Kimball, H. H., atmospheric transparency, 401; insolation, 1037; smoke problem, 1491; solar radiation, 1950
 Kimura, H., 39
 Kimura, M., colloidal solutions, 368; colloids, 174; disintegrating metals, 173; metal corrosion, 175
 King, A. S., arc and spark lines, 452; arc spectra, 235; Ti spectrum, 1415
 King, A. S., & P. P. Koch, microphotometer, 1824
 King, L. V., penetrating radiation, 260; thermal convection, 1993
 Kinnes, A., C. C. Paterson, & E. H. Rayner, power measurement, 392B
 Kirchhoff, 1555
 Kirsch, A., elasticity, 1199
 Kirschbaum, H., 1245
 Kirschbaum, H., & J. Stark, Stark-effect, 1071
 Kirschbaum, H., G. Wendt, and J. Stark, spectrum, 75
 Kithil, K. L., & R. B. Moore, sources of Ra, 985
 Kleeman, R. D., 712, 763, 1542, 1910; β -rays, 1427; ion clusters, 1709; ion instability, 311; surface tension, 1926
 Klein, mercury pump, 1175
 Kleinhanns, K., rock-salt, 1028
 Klemensiewicz, Z., RaB and ThB, 1644
 Klesper, R., & R. Ruer, Fe transformations, 1916
 Klien, R., 1361
 Klopsteg, P. E., moving coil, 1127; measuring fields, 551
 Klotz, O., undagraph, 24
 Knight, W. A., alloys, 1455
 Knight, W. A., & R. A. Joyner, amalgams, 1008
 Knipping, P., 85, 431, 1539; X-rays, 678
 Knott, C. G., magnetisation, 162
 Knudsen, M., 17, 270, 271, 1308; molecular weights, 2014

- Kobayashi-Iwao, electric waves, 1594
 Kobold, H., O. Tetens, & P. Harzer, meridian circle, 800
 Koch, J., dispersion, 232, 233
 Koch, P. P., 1066
 Koch, P. P., & A. S. King, microphotometer, 1824
 Koenig, A., & E. Elöd, active nitrogen, 979
 Koenigsberger, J., 106, 277, 305, 450, 536, 1120, 1339, 1502, 2020; reflection, 1410
 Koenigsberger, J., & A. Gallus, canal rays, 1872
 Koenigsberger, J., & K. Vogt, spectra, 860
 Köppen, W., thermometer screen, 403
 Köppen, W., & F. Wedemeyer, troposphere, 1211
 Kofler, M., solubility, 1166, 1354
 Kohlrausch, 332, 333, 1082, 1609
 Kohlrausch, F., 784
 Kohlrausch, K. W. F., air-flow, 1186
 Kohlschütter, 45
 Kohn, H., luminous vapours, 1555
 v. Kohnner & P. Winternitz, hydrogen, 1636
 Kohnstamm, P., 2000
 Kohnstamm, P., & K. W. Walstra, gas isotherms, 891; hydrogen isotherms, 1999
 Kolhörster, W., penetrating radiation, 888
 Kolowrat, L., radio-activity, 885; Ra Em, 484
 Kopp, 495
 Kordysch, L., photoelectrics, 312
 Koref, F., 1560
 Korn, A., electrons, 924; gravitation, 1206; symbols, 117
 Kortazzi, 1038, 1495
 Korteweg, 10
 Koto, S., & H. Ho, oscillograph, 547
 Kotournitzky, P., gas theory, 16
 Kottler, F., relativity, 1484
 Kovarik, A. F., α -particles, 1268
 Kořarik, A. F., & L. W. McKeehan, β -particles, 1269
 Kowalik, O. L., thermo-couples, 1114
 de Kowalski, J., discharge, 730, 1311; spectra, 1065
 v. Kowalski, J., discharge, 1590; reflected X-rays, 872*
 v. Kowalski, J., & F. v. Hauer, luminescence, 1076
 Kramer, B. J., & J. & R. Morgan, drop-weights, 1014
 Kraus, C. A., concentration cells, 1935; conductance, 1355
 Kraus, C. A., & W. C. Bray, conductance, 785
 Kreide, W., refraction, 641
 Krell-Prandtl, 1657
 Kröncke, H., X-rays, 1264
 Kroo, J., 1336; electron theory, 511
 Krüger, F., hydrogen electrode, 1025*
 Krüger, F., & A. Lauth, sound, 1567
 Krümmel, 1363
 Krumreich, H., electrode potentials, 364
 Krutkow, G., 1291; radiation, 909
 Kuenen, J. P., 2003; diffusion, 1432
 Küpper, W., sound, 1294
 Küstner, H., 939; photoelectrics, 717
 Kundt, 77, 1559
 Kunz, J., 1100, 1576; light theory, 1507
 Kurbatow, 536
 Kurek, F., cementation, 1350
 Kurlbaum, 498, 705
 Kurnakow, 1917
 Kurnakow, N. S., & S. T. Żemczużny, plastic bodies, 1780
 Kutowski, V., A. Gudima, & A. V. Schaposchnikow, nitrogen oxidation, 1453
 Kutschewski, J., 714
 Kutschewski, J., & E. Wagner, field-canal rays, 123
 Kužel, H., 2021
 van Laar, J. J., 1998; state equation, 1284; thermodynamics, 1553, 2004
 Labocetta, L., pendulum, 1770
 Labrouste, H., molecular layers, 817
 Lacey, W. N., & G. N. Lewis, electrode potential, 1936
 Ladenburg, 175, 180, 718, 1576
 Ladenburg, R., luminous vapours, 1677
 Ladenburg, R., & F. Reiche, D-lines, 1529
 Lagrange, 296
 Lahure & Hanriot, annealing, 989; cold work, 988
 Lallemant, C., litre, 1775
 Lamb, A. B., 374
 Lamb, A. B., & R. E. Lee, densities, 373
 Lamort, J., Fe-Ti alloys, 1755
 Lander, C. H., struts, 384
 Langevin, P., 98, 165, 392, 493, 558, 1098, 1142, 1432, 1702; energy inertia, 13
 Langley, 69
 Langmuir, I., 1577, 1588, 1699; formation heat, 910; thermionics, 725; vapour-pressure, 907
 Langmuir, I., E. Q. Adams, & G. S. Meikle, heat-flow, 809
 Langmuir, I., & G. M. J. Mackay, dissociation, 1932
 Larmor, J., 705, 707
 Larmor, J., & J. S. B. Larmor, lighting rods, 1705
 Larmor, J. S. B., & J. Larmor, lighting rods, 1705

- Laroquette, 1150
 La Rosa, M., 228
 La Rosa, M., & V. Cavallaro, photo-electrics, 129
 Larsen, E. S., 642
 Lasareff, P., 1308
 Lasby, J. B., & W. S. Adams, Nova, 421
 Laschtschenko, P. N., cooling heats, 1753
 Lau, H. E., 40; Jupiter, 40
 Laub, J., X-rays, 677, 868, 1424, 1843
 v. Laue, M., 87, 88, 243, 431, 479, 566, 671, 674, 676, 681, 1044, 1422, 1825; reflected X-rays, 872*, 875; space lattices, 871, 874; X-ray photographs, 90
 v. Laue, M., & J. S. van der Lingen, Debye-effect, 870
 v. Laue, M., & K. Schaposchnikow, relativity, 390
 Lauth, A., & F. Krüger, sound, 1567
 Laws, S. C., 921
 Lawson, R. W., 1275; discharge, 530; spectra, 658; thorium, 1686
 Lea, F. C., & O. H. Crowther, elasticity, 1942
 Leatham, J. G., potential theory, 1700
 Lebedew, 440
 Lebedew, P. N., 1122
 Lebedinski, 1439
 Leblanc, M., & E. Darmois, a.c. mercury arc, 589B
 Le Blanc, M., passivity, 1646
 Le Bon, G., relativity, 1482
 Lebreton, 1856
 Lecher, 1106
 Lechner, G., water flow, 183
 Leduc, 1120
 Lee, H. R., chemist's slide-rule, 1155
 Lee, O. J., 1134 Piscium, 628
 Lee, R. E., 374
 Lee, R. E., & A. B. Lamb, densities, 373
 Lees, C. H., 332, 536, 1082
 Le Floch & Taffanel, combustion, 280
 Lehmann, 845; reflected X-rays, 872*
 Lehmann, I., δ Cephei, 1395
 Lehmann, O., liquid crystals, 352, 1153; units, 2
 Lehnhardt, R., ion adsorption, 121
 Leidenfrost, 2017
 Leighton, A., electrolysis, 583
 Leimbach, G., Hertz oscillators, 950; wireless, 1722
 Leiss, C., spectrograph, 637
 Leiss, C., & W. W. Coblenz, radio-meter, 639
 Leitz, 638
 Lejeune, F., elasticity, 381
 Leman, E. D., & H. N. McCoy, actinium X, 887
 Lambert, M. E., & T. W. Richards, at. wt. of Pb, 1751
 Lemon, H. B., spectro-photometer, 1237
 Lenard, 129, 1307
 Lenard, P., 126, 175, 313, 1056, 1576, 1581, 1710
 Lenz, W., Tesla transformer, 1107
 Lepage, A., & C. D. Moore, He in mine gas, 889
 Lepke, W., magnetisation, 1335
 Leprince-Ringuet, F., gas ignition, 1997; inflammability, 1856
 Le Rolland, P., pendulum, 1479
 Le Roy, G. A., gramophone records, 918
 Levi-Civita, T., heat theory, 1290
 Levitska, M., β -rays, 93
 Levy, A. G., & H. M. Howe, elasticity, 1370
 Lévy-Dorn, radio-dosemeters, 1342
 Lewis, E. P., spectrum, 234, 1833
 Lewis, G. N., & E. Q. Adams, quantum theory, 1091
 Lewis, G. N., & W. N. Lacey, electrode potential, 1936
 Lewis, S. J., 2021
 Lewis, T., double-stars, 418
 Lewis, W. C. McC., 279; liquid cohesion, 1859
 Li, M. H., & O. P. Watts, electrolysis, 1768
 Lichte, H., singing arc, 293
 Lichtenwalter, H. O., & H. P. Cady, conductivity, 786
 Liebreich, E., magnetisation, 1134
 Liebreich, E., & A. Wehnelt, thermionics, 135
 Lilienfeld, J. E., Coolidge tube, 1578; discharge, 723; thermionics, 1577
 Lilienfeld M., 1361
 Linde, 690
 Lindemann, 305, 1022
 Lindemann, C. L., 688
 Lindemann, F. A., 693, 699, 936, 1560, 1739; atomic models, 1196; X-ray spectra, 475
 Lindemann, F. A., & M. de Broglie, X-ray spectra, 676, 1263
 Lindemann, F. A., & F. Schwes, specific heats, 105
 Lindemann, R., 1107
 Lindemann, R., & G. Schulze, valve cells, 1642
 Lindholm, F., actinometry, 399
 Lindsay, G. A., elasticity, 1475
 van der Lingen, J. S., liquid crystals, 566
 van der Lingen, J. S., & M. v. Laue, Debye-effect, 870
 Linnitschenko, N., 323
 Lippmann, 1505
 Lippmann, G., 799, 1479; longitude determination, 1380; telescope adjustment, 640

- Liveing, 657
 Livens, G. H., optical activity, 1058 ; spectra, 227, 860
 Livens, G. H., & G. Bruhat, optical activity, 1521
 Lobatchevski, 593
 Lockyer, 1680
 Lodge, O. 1796 ; atmosphere's electrification, 1928 ; Goldschmidt dynamo, 144
 Lohmann, W., 1255, 1682
 Lohr, E., moving media, 513
 Lohr, J. M., luminescence, 472
 van Lohuizen, 1068
 Long, S. H., colloidal Au, 362
 Long, S. H., & H. Morris-Airey, colloidal metals, 361 ; colour-sensitised plates, 210
 Lord, H. C., doublet lens, 206
 Lorensen, 1680
 Lorentz, 13, 68, 227, 230, 232, 305, 392, 436, 450, 536, 664, 707, 900, 1056, 1092, 1481, 1509, 1791, 1795, 1860
 Lorentz, H. A., 98, 115, 229, 705, 922, 1031, 1416, 1521, 1797, 1848 ; electronic motion, 706
 Lorentz-Fitzgerald, 1974
 Lorenz, 392, 955, 1082
 Loring, F. H., atomic weights, 981, 1623 ; magnetism, 1143 ; radio elements, 1909
 Lo Surdo, 667, 1985
 Lo Surdo, A., 1060 ; dew, 1847 ; spectra, 1059 ; Stark-effect, 666 ; sky's temperature, 608
 Love, 1038
 Lovibond, 839
 Lowell, 1800
 Lowry, T. M., & H. H. Abram, cadmium arc, 1827
 Lowry, T. M., & T. W. Dickson, rotatory dispersion, 1828
 Lübben, K., dispersion, 1966, 1967
 Ludewig, P., spectrum, 228
 Lukeno, H. S., electrolysis, 369
 Lummer, 1535, 1690
 Lummer, O., 77, 691, 705, 901, 1287 ; temperature in arc, 107
 Lunelund, H., 1839
 Lunt, 624
 Lunt, J., spectrum, 1417
 Lusby, 1581
 Lussana, S., 690 ; specific heats, 1689
 Lussana, S., & M. Bellati, passage of H through Fe, 176
 Lutze, G., atmospheric potential, 951 ; wireless, 952
 Lyle, T. R., self-inductance, 541
 Lyman, 1680
 Lyman, T., Hg spectrum, 236 ; u.v. spectrum, 1244
 Lyon, E. R., floating magnets, 1144
 McCance, A., hardening, 1757
 McClelland, N. P., fluorescence, 1074
 McCoy, H. N., 480
 McCoy, H. N., & E. D. Leman, actinium X, 887
 McDaniel, A. S., 1609
 McDaniel, A. S., G. W. Vinal, & E. B. Rosa, silver voltameter, 153, 744
 Macdonald, H. M., electric waves, 1313
 McEwen, G. F., ocean temperatures, 29
 Mach, 438
 Mache, H., & L. Flamm, Ra Em, 247
 Mackay, G. M. J., & I. Langmuir, dissociation, 1932
 McKeehan, L. W., cathode rays, 1714
 McKeehan, L. W., & A. F. Kovarik, β particles, 1269
 Mackie, J. H., electrons, 1299
 McKirahan, W. W., & J. L. R. Morgan, drop weights, 1012
 McLaren, S. B., gravity, 6 ; magneton, 341
 MacLaurin, 413
 McLennan, J. C., 1535 ; ionisation, 519 ; spectrum, 1830
 McLennan, J. C., & D. A. Keys, ionisation, 520
 McLennan, J. C., & A. R. McLeod, Hg green line, 1535 ; penetrating radiation, 493
 McLeod, A. R., & J. C. McLennan, Hg green line, 1535 ; penetrating radiation, 493
 McTaggart, H. A., charge on bubbles, 958 ; electrification, 1863
 M'Whan, J., thermoelectrics, 1607
 Madan, 642
 Madelung, 693, 1025, 1509
 Madelung, E., surface tension, 18
 Maeda, S., S. Fujiwhara, & Okada, seiches, 822
 Magie, 1793
 Magnusson, C. E., & H. C. Stevens, electrophysiology, 1906
 Magrini, S., potential experiments, 542
 Mainka, C., seismology, 821
 Mainstone, P. A., & B. Hodgson, discharge, 141
 Mair, L., & H. v. Wartenberg, ozone formation, 1353
 Makower, 691
 Makower, W., & S. Russ, β -rays, 882
 Malam, J. E., & W. M. Jones, Hall-effect, 1331
 v. Malinowski, A., 1534 ; Hg spectrum, 222, 1523
 Mallik, D. N., diffraction, 1673
 Mallock, A., intermittent vision, 648
 Malmberg, I., damping vibrations, 1378
 Malmer, I., radiation and telephone, 335
 Mandelstam, L., 1677 ; optics, 1510

- Mangin, 1043
 Marage, ear's sensitiveness, 1566
 Marble, H. M., & F. C. Mathers, electrolysis, 1767
 Marchetti, A., refraction, 1411
 Marckwald, W., RaEm, 1430
 Marcolongo, R., electrodynamics, 1092
 Marconi, 950
 Margetson, 1783
 Marini, E., iron in a.c. circuit, 1328
 Markau, 1576
 Marsden, E., 252, 258, 481, 567, 1031, 1032; α -particles, 1425
 Marsden, E., & P. B. Perkins, actinium, 1429
 Marsden, E., & A. B. Wood, molecular weights, 765
 Marsden, E., & R. H. Wilson, actinium C, 100; Th deposit, 97
 Marsh, J. E., cobalt colours, 1632
 Martens, 1476
 Martens, A., bending tests, 1371; spring manometers, 801
 Martens, F. F., coupled circuits, 732, 1108; units, 592
 Martin, C., & H. C. Plummer, XZ Cygni, 1398
 Martin, P., Kerr-effect, 342
 Marx, 1448
 Masson, I., spectra, 462
 Mathers, F. C., electrolysis, 794
 Mathers, F. C., & H. M. Marble, electrolysis, 1767
 Mathews, A. P., internal pressures, 279
 Mathews, I[rene] M., refraction, 1826
 Mathewson, C. H., & W. M. Scott, alloys, 776
 Mathewson, C. H., & C. H. Stokesbury, Ag-Cu₂O system, 1347
 Mathy, E., induction, 741
 Matsushita, T., & K. Honda, seiches, 1803
 Matthiessen, 772
 Mattioli, V., & T. Gnesotto, Wiedemann-effect, 751
 Matweew, M., & A. Glasunow, alloys, 993
 Matweieff, Neumann lines, 1912
 Mauchly, S. J., 519, 1582
 Maunder, E. W., sun-spots, 1222
 Maunder, E. W., & F. W. Dyson, sun's axis, 409
 Maurain, C., 756
 Maurain & de Moismont, air friction, 152B
 Maurer, 1917
 Maurer, J., & C. Dorno, meteorology, 1034
 Maxwell, 13, 16, 55, 326, 439, 440, 661, 914, 1187, 1338, 1432, 1481, 1733, 1795
 Mayer, 264, 1144
 Mayer, F., α -particles, 91
 Mayer-Mita, R., elasticity, 1183
 Mazères, 1150; X-ray localisation, 1151
 Mazzotto, D., alloys, 172; Sn-Cd alloys, 575
 Mazzucchelli, A., rotatory power, 1923; spectra, 1679
 Mecklenburg, W., & S. Valentiner, cloudiness, 1822
 Medard, L., H. Fontaine, & Billon-Daguerre, mercury lamp, 548
 Medlicott, 1194
 Mees, C. E. K., 843; photography, 212
 Meese, B., optics, 848
 Meikle, G. S., E. G. Adams, & I. Langmuir, heat-flow, 899
 Meinardus, 1382
 Meisner, 901
 Meissner, H., & F. Wüst, cast-iron, 1001
 Meissner, K., & F. Paschen, spectra, 1243
 Meissner, W., heat conductivity, 1082
 Meitner, [Miss] L., 97, 284, 481
 Meitner, [Miss] L., & O. Hahn, γ -rays, 257; radio-actinium, 104; UrX₂, 103; UrY, 1546
 Melcher, A. F., density, 1785
 Melde, F. E., 296
 Melotte, P. J., & S. Chapman, number of stars, 1814; star magnitudes, 625; stellar photometry, 626
 Ménard, M., X-ray protection, 169
 Mendeleeff, 1090
 Mendenhall, C. E., 208
 Mendenhall, C. E., & W. E. Forsythe, black-body temperatures, 111; high-temperature measurements, 1851; m.p. of Mo, 112
 Menzies, A. W. C., critical temperatures, 277
 Mercer, H. N., specific heats, 1690
 Merica, P., & H. Hanemann, alloys, 1161
 Merkel, E., discharge, 1309
 Merrill, P. W., stellar spectra, 53, 419, 622
 Merton, T. R., high vacua, 1180; Ne spectrum, 657; producing rare gases, 1715; spectra, 1062
 Merwin, H. E., 642
 Meslin, G., solar rotation, 1806
 Meuthen, A., Fe-C system, 782
 Meyer, E., & W. Gerlach, point discharge, 139
 Meyer, J., colloidal sulphur, 1157
 Meyer, L., 1187
 Meyer, O. E., 360, 1432
 Meyer, S., life of Ra, 480; solubility, 577
 Meyer, T. J., reflection, 841
 Michaud, G., & J. F. Tristan, flower colouring, 444; eye under u.v. rays, 1511

- Michelson, 644
 Michelson, A. A., 1066, 1495, 1815 ;
 earth's rigidity, 1038 ; sun-spots, 193
 Michelson, W., actinometer, 371
 Mie, G., 1191 ; gravitation, 809
 Miell, W., liquid films, 819
 Mikola, S., liquid films, 820
 Milankovitch, M., light absorption, 850 ;
 Mars, 1811
 Milham, W. I., meteorology, 1490
 v. Miller, H., Cu-Sn bronzes, 773
 Miller Bar, 66
 Millikan, R. A., 718, 1859 ; elementary
 charge, 116
 Millochau, G., pyrometry, 1556
 Millochau, M., discharge, 1592
 Millochau & M. Hamy, spectrum, 1418
 Millochau & P. Salet, chromosphere,
 1387
 Milne, 30, 612
 Mimeo, A., shot tests, 805
 Minkowski, 118, 512, 707, 1204
 v. Mises, R., elasticity, 1376
 Mita, Mayer-, R., elasticity, 1183
 Mitchell, S. A., 58, 1831 ; chromo-
 sphere, 616 ; reversing layer, 1385
 Mitchell, S. A., & F. Slocum, star
 parallaxes, 48
 Mitkevitch, V. F., & A. I. Gorbov,
 nitrogen oxidation, 1452
 Mitkiewicz, 1439
 Mixter, W. G., thermochemistry, 1345
 Mizoguchi, T., & K. Fuji, lava, 1276
 Młodziejowski, 352
 Mohammad, Wali-, C., spectrum, 1252
 Mohler, J. F., Braun tube uses, 543
 Mohorovičić, S., relativity, 593
 Moir, M. B., magnetism, 160, 1447
 de Moismont & Maurain, air-friction,
 152B
 Moissan, 1454, 1749
 Moldenhauer, M., cerium, 1750
 Moles, E., & B. Cabrera, magneto-
 chemistry, 561
 Moles, E., J. Guzman, & B. Cabrera,
 magneto-chemistry, 1339
 Moll, W. J. H., thermopile, 747
 Moore, H., X-rays, 682
 Moore, J. H., δ Cephei, 1232
 Moore, J. H., & R. F. Sanford,
 η Carinae, 1229
 Moore, R. B., & K. L. Kithil, sources
 of Ra, 985
 Morawe & Hanemann, pearlite, 2030
 More, L. T., 529, 1582 ; mechanics,
 1205
 Moreau, G., flame couples, 517, 711,
 932
 Moreschini, 1280
 Morgan, J. D., pressure recorder, 1647
 Morgan, J. L. R., 788
 Morgan, J. L. R., & G. A. Bole, drop-
 weights, 186
 Morgan, J. L. R., & P. M. Chazal,
 drop-weights, 1013
 Morgan, J. L. R., & W. M. McKirahan,
 drop-weights, 1012
 Morgan, J. L. R., & B. J. Kramer,
 drop-weights, 1014
 Morgan, J. L. R., & M. Neidle, drop-
 weights, 1016
 Morgan, J. L. R., & E. Schramm, drop-
 weights, 1015
 Morgan, J. L. R., & E. C. Stone, drop-
 weights, 185
 Morley, 644
 Morley, A., columns, 1200
 Morris-Airey, H., & S. H. Long, col-
 loidal metals, 361 ; photography, 210
 Morse, 1563, 1934
 Moseley, H. G. J., 243, 254, 475, 477,
 483, 872, 877, 1079, 1080, 1196, 1246,
 1480, 1543, 1544, 1838, 2012 ; h.f.
 spectra, 467, 1249
 Moseley, H., & N. Bohr, X-ray spectra,
 476
 Moss, 1081
 Moss, H. W., 1530
 Mossotti-Clausius, 1316, 1601
 Moulin, M., 321, 712
 Moulton, 1495
 Moureu, C., & A. Lepape, He in mine
 gas, 889
 Mouton, 182
 Mouton, H., P. Drapier, & A. Cotton,
 magneto-optics, 215, 459
 Mozer, H., & A. Coehn, contact-
 electricity, 1322
 Mügge, O., capillary crystals, 770
 Mueller, E. F., & H. C. Dickinson,
 resistance thermometers, 893
 Munari, C., relativity, 1791
 Myers, C. N., & S. F. Acree, hydrogen
 electrode, 1170
 Mylius, 168
 Myssowsky, L., & K. Nestourkh, α -
 particles, 881
 Nagaoka, H., 166, 1535 ; a.c. phe-
 nomena, 159 ; thunderstorms, 1097
 Nagaoka, H., & T. Takamine, crossed
 spectra, 77 ; Zeeman-effect, 867,
 1839
 Nair, T. K., & T. Turner, volatility of
 Zn, 353
 Name, R. G. Van, rheostat, 2009
 Nansen, F., 1805
 Nares, C. S., 28
 Nashan, P., star spectra, 1231
 Nasini, R., & U. Bresciani, superfusion
 1280
 Nathanson, J. B., determining e/m and
 v , 124
 Neidle, M., & J. L. R. Morgan, drop-
 weights, 1016

- Nernst, 269, 270, 271, 506, 738, 742, 908, 1022, 1082, 1115, 1120, 1171, 1283, 1509, 1555, 1637, 1693, 1739, 2001
 Nernst, W., 1846, 1858, 1906; thermodynamics, 502
 Nernst, W., & F. Schwes, specific heats, 1084
 Nestourkh, K., & L. Myssowsky, α -particles, 881
 Nettleton, H. R., heat conductivity, 496
 Neubert, P., discharge, 941, 1310
 Neumann, 1912
 Neumann, B., & S. Giertsen, preparing Na, 1752
 Neumann, E., 1046, 2021
 Neumann, G. & C. Schaefer, electrons, 922
 Neumeier, F., & G. Gehlhoff, conductivity, 536, 1443
 Neville, 776
 Newcomb, 417, 1801
 Newman, F. H., discharge, 1717
 Newton, 1660
 Nichols, 439, 440, 695
 Nichols, E. L., & H. L. Howes, luminescence, 1684
 Nicholson, J. W., 15, 476, 812, 1196; atomic structure, 1480; Bohr's theory, 1247; He spectrum, 1832; h.f. spectra, 477, 1246; nebulae, 1396, 1818, 1820; Wolf-Rayet stars, 1040
 Nicholson, P. J., selenium, 1113
 Nielsen, C., 269
 Nipher, 1657
 Nishikawa, S., X-ray spectrum, 1988
 Nishikawa, S., & S. Ono, X-rays, 85
 Noble, A., 380
 Nogier, T., radiographs, 168
 Noiré, Sabouraud-, 1743
 Nolan, J. J., ballo-electrics, 1702
 Noll, 956
 Nordlund, I., Stokes' law, 180
 Nordström, G., 619, 1193; electromagnetics, 1437; gravitation, 7, 1191; planet motions, 1389
 Norsa, L., 1754
 Northrup, E. F., 332, 899; conduction, 1882; furnace, 1612; heat-flow, 898, 899*; resistivity of Ag, 1728; resistivity of Au, 1123; resistivity of Cu, 491B
 Norton, A. B., testing machine, 1938
 Noyes, A. A., 784
 Nuttall, J. M., 1268
 Nuttall, J. M., & E. Rutherford, α -particles, 252
 Nutting, P. G., eye's aberration, 1671; latent image, 214; optics, 1051; photography, 1970; spectrum, 466
 Nutting, P. G., & L. A. Jones, photometer, 1823
 Oba, S., γ -rays, 1271
 Obach, E., 1859
 Obata, J., resistance standards, 1890
 Oberhoffer, 782
 Obolensky, 323, 526
 Occhialini, A., dielectrics, 538, 1316; discharge, 1877
 Occhialini, A., & E. Bodareu, dielectrics, 1129
 Ogden, H., ion recombination, 712
 Ogg, A., 1901
 Ogloblinsky, N., theodolite, 750
 Ogura, Y., 1894
 Ogura, Y., & K. Honda, magnetisation, 1133
 Ohlon, E., luminescence, 241
 Ohm, 331
 Okada, T., 406
 Okada, T., S. Fujiwhara, & S. Maeda, seiches, 822
 Ôkôchi, M., projectile velocity, 5
 Oldenberg, O., spectra, 451
 Oldham, R. D., plumb-line, 1194
 Ollive, F., solar system, 621
 Onnes, H. K., 108, 165, 269, 305, 1140, 2003; Hall-effect, 1617; superconductivity, 330, 1121
 Onnes, H. K., & P. Curie, radium, 96
 Onnes, H. K., & W. H. Keesom, vapour pressure, 108
 Onnes, H. K., & E. Oosterhuis, paramagnetism, 163; susceptibility of oxygen, 164
 Onnes, H. K., & A. Perrier, gas susceptibility, 1141, 1142; cryomagnetic apparatus, 969
 Onnes, H. K., & S. Weber, vapour pressures of CO₂, 270
 Ono, S., & S. Nishikawa, X-rays, 85
 Oosterhuis, E., 305, 345; cryomagnetics, 1140; magnetism, 165, 346
 Oosterhuis, E., & H. K. Onnes, magnetism, 163; susceptibility of O, 164
 Orloff, 1038, 1495
 Orlov, S. V., comet, 415
 Ornstein, L. S., 871, 915; reflected X-rays, 479; space-lattices, 874
 Ortway, R., vibrations of solids, 285
 Osborne, N. S., D. R. Harper, & H. C. Dickinson, latent heat, 894
 Oseen, C. W., electric oscillations, 325; electric waves, 326; Planck's theory, 913; Stokes' law, 184
 Osgerby, E. W., R. C. Tolman, & T. D. Stewart, accelerated conductors, 1089
 Ostwald, 12, 2036
 Ostwald, W., colloidal state, 363
 Otashiro, T., electrons in metals, 114
 Otsuki, C., & T. Sudzuki, photography, 1975
 Ottenstein, B[erta], H. Gebhardt, and A. Gutbier, occlusion, 1748
 Owen, E. A., 1331, 1867

- Owen, E. A., & G. G. Blake, reflected X-rays, 681
- Oxley, A. E., diamagnetics, 1739
- Paal, 1748
- Paal, C., & C. Hohenegger, adsorption, 1746
- Pacini, D., ionic emissions, 1868
- Padoa, M., & G. Tabellini, solution, 788
- Paech, G., photoelectrics, 720
- Page, L., photoelectrics, 318; relativity, 1797
- Pal, G., & H. E. Watson, radio-activity, 1688
- Palm, A., electro-dynamometer, 746
- Paneth, F., 982; radio-chemistry, 580, 1450
- Paneth, F., & G. v. Hevesy, indicators, 579; polonium, 581; radio elements, 582; RaD, 578
- Parenty, H., fluid jets, 1941; gas flow, 1786
- Paris, E. T., 1050
- Paris, E. T., & A. W. Porter, optical rotation, 852
- Parker, A., 523, 1867; methane inflammation, 1281
- Parker, A., & A. V. Rhead, flame velocities, 2002
- Parkhurst, 198
- Parr, P. H., & R. M. Deeley, glacier, 611
- Partington, J. R., specific heat, 691, 1559
- Partzsch, A., photoelectrics, 1575
- Pascal, P., density, 1368; diamagnetics, 1618, 1901
- Pascal, P., & A. Jouniaux, density, 590; magnetic compounds, 559
- Paschen, 364, 1680
- Paschen, F., 225, 236, 239, 457, 659, 662, 705, 901, 1256, 1287, 1830; infra-red filter, 1042
- Paschen, F., & W. Gerlach, Stark-effect, 1534
- Paschen, F., & K. Meissner, spectra, 1243
- Paschen, F., & C. Runge, oxygen in sun, 827
- Paschen, F., H. Buisson, J. S. Ames, & H. Kayser, secondary standards, 856
- Paschen, H., shadows, 219
- Paschoud, M., uniform flow, 1658
- Paschwitz, 1038, 1495
- Paterson, C. C., E. H. Rayner, & A. Kinnes, power measurement, 392B
- Patterson, 1727
- Patterson, H. S., 1715
- Patterson, T. A., conductivity, 1169
- Pauli, R., & W. E. Pauli, photometry, 69
- Pauli, W. E., & R. Pauli, photometry, 69
- Pawlow, W. I., ionisation, 1710
- Pechau, W., seismic motion, 1214
- Pécheux, 956
- Peczalski, T., specific heats, 267; thermodynamics, 504
- Peddie, W., atom structure, 810
- Pedersen, P. O., capacity of netting, 151; Goldschmidt dynamo, 144
- Peirce, B. O., magnetisation, 1446
- Pelabon, H., thermoelectrics, 1604, 1605
- Pellat, 709
- Peltier, 305, 706, 738, 900, 957, 1120, 1317
- Perkins, P. B., ThEm, 1274
- Perkins, P. B., & E. Marsden, actinium, 1429
- Perkins, W. H., porosity of iron, 1000
- Perley, G. A., T. J. Twomey, & H. A. Robinson, photography, 1055
- Perot, 77
- Perot, A., & H. Deslandres, intense fields, 752, 1136, 2010
- Perrier, 163, 1140
- Perrier, A., & H. K. Onnes, cryomagnetics, 969; gas susceptibility, 1141, 1142
- Perrin, J., 1121, 1859; emulsions, 1634
- Perrine, C. D., concrete-steel dome, 1953
- Perucca, E., elliptic analyser, 448
- Peters, W. J., & L. Bauer, magnetic declinations, 1149
- Petiot, M., furnace electrodes, 40B*
- Petit, 1152
- Pfleiderer, G., a.c. measurements, 967
- Pfund, A. H., 1113
- Pfund, A. H., F. C. Jordan, & F. Schlesinger, λ Tauri, 422
- Phillips, 806
- Phillips, C. E. S., Ra rays and bakelite, 1267
- Phillips, F. S., phosphorescence, 470
- Phillips, T. E. R., Jupiter, 1039
- Philpot, A. J., X-rays, 1260
- Picart, L., orbits, 635
- Piccard, A., 1142, 1337
- Piccard, A., & P. Weiss, magnetochemistry, 562
- Pickering, 1244, 1247, 1680, 1832
- Pickering, E. C., variable star, 1399
- Pickering, S., 301
- Pickering, W. H., lunar crater, 617
- Pictou, 521
- Piersol, R., & O. Stuhlmann, photoelectrics, 1574
- Pignataro, P., selenium, 735
- Piltschikow, 1503
- Pingree, L. W., & S. W. Young, suspensions, 783
- Pirani, 1733

- v. Pirani, M., pyrometry, 498
 Pitot, 1186, 1657
 Pizzarello, A., pendulum, 1
 Planck, 14, 19, 110, 221, 226, 227, 232, 284, 286, 288, 341, 458, 503, 701, 704, 705, 726, 901, 908, 912, 913, 914, 1047, 1087, 1287, 1305, 1414, 1416, 1433, 1523, 1551, 1680, 1695, 1727, 1739
 Planck, M., 915; gas theory, 702; physical knowledge, 1795
 Planck, W., refraction, 1676
 Plaskett, J. S., spectroscopy, 58
 Plotnikow, W. A., & V. E. Rokotjan, conductivity, 1921
 Plummer, H. C., star motions, 42, 1497; variable stars, 46
 Plummer, H. C., & C. Martin, XZ Cygni, 1398
 Pockels, A., 459; surface tension, 597
 Pösch, R., phonograph, 1296
 Pogány, B., optics of thin layers, 1727
 Poggendorf, 153, 744, 1171
 Pohl, R., 314, 315, 936, 1100
 Pohl, R., & P. Pringsheim, photo-electrics, 719, 945, 1306
 Pohrt, G., dielectrics, 1122
 Poincaré, 1408
 Poincaré, H., 13, 413, 1549
 Poiseuille, 12, 183, 387, 596, 1186
 Poisson, 1778
 Poliakova, Vojtkevič, H. B., Nova spectrum, 623
 Pollitzer, 1022
 Pomey, J. B., magnets, 970
 Poole, H. H., heat conductivity, 689; RaEm, 1272
 Poor, C. F., 58
 Porlezza, C., spectrum, 863
 Porter, A. W., 1238; images, 1050; liquid CO₂, 703
 Porter, A. W., & C. Cuthbertson, refraction, 1273
 Porter, A. W., & B. A. Keen, diffraction, 645
 Porter, A. W., & E. T. Paris, optical rotation, 852
 Portevin, A., Cu-Sn alloys, 1760; resistance of Fe, 1914
 Portevin, A., & E. L. Dupuy, thermo-electrics, 736
 Pospielow, A., luminescence, 1259
 Potter, W. S., Mn steel, 1460
 Pougnet, J., E. Segol, & J. Segol, Weston cell, 745
 Poulsen, 658, 1134
 Powell, H., 839
 Poynting, J. H., 850
 Prandtl, W., diamond, 1749
 Prandtl, Krell-, 1657
 Prausnitz, P. H., electrolysis, 366
 Precht, 1530
 Preuss, E., shock tests, 1372
 Prideaux, E. B. R., membrane potentials, 2040
 Pring, J. N., 1304, 1867; ozone in atmosphere, 1217; thermionics, 523
 Pring, J. N., & U. C. Tainton, electrolysis, 1172
 Pringsheim, E., 314, 691, 705, 901, 936, 1287, 1690
 Pringsheim, P., 139, 315, 1100
 Pringsheim, P., & R. Pohl, photo-electrics, 719, 945, 1306
 Pritschow, K., prism, 427
 Proudman, J., radiation pressure, 67
 Proumen, H. J., ionisation, 934
 Prout, 13
 Provotelle, coupled circuits, 1441
 Prziza, O., & F. Fischer, electrolysis, 1173
 Puccianti, L., 289; spectra, 1060, 1061
 Pulfrich, C., stereo-comparator, 1772
 Puschin, N. A., & A. V. Baskov, conductivity, 1724
 Puschin, N., & M. Kauchtschev, ozone yield, 1922
 Puschin, N. A., & V. N. Rjashski, conductivity, 1754
 v. Putnoky, L., boundary liquid-gas, 1023
 Pye, D. R., 703
 Quartaroli, A., magnetism, 1740
 Quincke, 1023, 1293, 1337
 Quincke, G., 958; electric rays, 946, 947; foam walls, 968; ion clouds, 1279
 Radacović, 5
 Raman, C. V., phonic wheel, 1697; sound, 1696
 Ramsay, 1280, 1283
 Ramsay, W., 587, 1655
 Rankin, I. G., & W. F. D. Chambers, X-rays, 1841, 1989
 Rankine, 108
 Rankine, A. O., viscosity, 360
 Rankine-Bose, 2001
 Raoult, 1998
 Rapp, I. M., air-flow, 387
 Ratner, S., electric wind, 927
 Ray, B., & G. H. Clevenger, Cu in steel, 779
 Raydt, U., & G. Tammann, Fe-Zn alloys, 2024; Mo-Co alloys, 2022
 Rayet, Wolf-, 1040, 1247, 1818
 Rayleigh, 295, 296, 302, 303, 437, 439, 458, 645, 705, 902, 1048, 1292, 1492, 1523, 1529, 1677, 1735, 1885; diffraction, 1238; fluid motions, 1201; long waves, 1486; motion of fluid, 10, 386; reflection, 429; radiation pressure, 440; revolving liquid, 1663; waves, 1207; whispering galleries, 920

- Rayner, E. H., C. C. Paterson, & A. Kinnes, power measurement, 392B
 Read, A. A., Cu-Al alloys, 1459
 Read, A. A., & R. H. Greaves, Cu-Al alloys, 1465
 v. Rebeur, 1038, 1495
 Reboul, G., photoelectrics, 936
 Réchou, G., localisation by X-rays, 1150
 Reeve, S. A., "suction" between ships, 1662
 Regaud, C., X-ray tubes, 1449
 Regnault, 1561
 Reich, M., electric waves, 534
 Reiche, F., 1677
 Reiche, F., & R. Ladenburg, sodium D-lines, 1529
 Reichenbach, 443
 Reichinstein, D., electrolysis, 1360
 Reichinstein, G., passivity, 1646
 Reifler, 1477
 Reinders, W., solution, 1007
 Reinhold, M., capillarity, 396
 Reis, A., spectroscopy, 465
 Reismann, B., spectra, 1253
 Reissner, H., relativity, 1203
 Reisz, E., relay, 350B
 Renger, K., & P. Weiss, magnetisation, 1735
 Renwick, F. F., density meters, 1972 ; photography, 1971
 Riewa, A., pyrometry, 1562
 Retschinsky, T., light-absorption, 433
 Rey, J. J., 493
 Reynolds, J. H., nebula, 1041
 Reynolds, O., 183, 1186
 Rhead, A. V., & A. Parker, flame velocities, 2002
 Riabouchinsky, D., hydrodynamics, 1659
 Ribaud, G., light absorption, 450
 Ribaud, G., & R. W. Wood, magneto-optics, 1536
 Riccò, A., prominences, 1668
 Richards, 333, 962
 Richards, J. W., conduction, 1882* ; electrolysis, 1769 ; heat flow, 899* ; heat resistivity, 897
 Richards, T. W., critical point, 1469
 Richards, T. W., & A. H. Fiske, thermometry, 1085
 Richards, T. W., & M. E. Lambert, at. wt. of Pb, 1751
 Richards, T. W., & J. W. Shipley, thermometry, 892, 1850
 Richards, T. W., & C. L. Speyers, compressibility of ice, 1029
 Richardson, 127, 135, 318, 523, 725, 726, 1100, 1429, 1576, 1712, 1864
 Richardson, H., 254 ; γ -rays of Ur, 886
 Richardson, H., & E. Rutherford, γ -rays of RaD, 94 ; γ -rays of Th, 487
 Richardson, O. W., photoelectrics, 1305 ; thermionics, 132, 935, 1304
 Richardson, O. W., and K. T. Compton, photoelectrics, 314
 Richardson, O. W., & H. L. Cooke, thermionics, 133
 Richardson S. S., prisms, 1821
 Richarz, 264, 265, 553, 1561
 Richarz, F., 1046
 Richter, O., specific heats, 265
 Riecke, E., 305, 900, 1086, 1703 ; piezo-electricity, 309
 Riegger, H., wireless, 953
 Riegger, H., & J. Zenneck, sound, 1293
 Rieman, 529
 Riemann, B., 6
 Righi, 754
 Righi, A., discharge, 131 ; ionomagnetic rotations, 1870 ; magnetic rays, 529, 1582
 Rignoux, G., telectroscopy, 1136B
 Rihl, 293
 Rimbach, 495
 Rimington, 1733
 Ringuet, Leprince-, F., gas ignition, 1997 ; inflammability, 1856
 Ritz, 225, 436, 457, 1247
 Ritz, W., 218, 645, 1070, 1244
 Rjashski, V. N., & N. A. Puschin, conductivity, 1754
 Roberts, C. E., alloys, 1456
 Roberts, Emrys-, E., & J. H. Shaxby, Brownian motions, 1202
 Robin, F., magnetism, 758*
 Robin, S., 997
 Robinson, 1031
 Robinson, H., 1544
 Robinson, H., & E. Rutherford, β -rays, 251
 Robinson, H. A., T. J. Twomey, & G. A. Perley, photography, 1055
 Robitzsch, M., sunshine records, 609
 Roderburg, A., uranium, 2019
 Rodger, 1357
 Roebuck, J. R., porous plug method, 273
 Rogers, F., "crystallisation by fatigue," 357
 Rohmann, H., h.f. magnetisation, 1737
 Rokotjan, V. E., & W. A. Plotnikow, conductivity, 1921
 Rolla, L., specific heat, 1560 ; visibility of precipitates, 1359
 Rolland, P. Le, pendulum, 1479
 Rosa, E. B., 1609
 Rosa, E. B., G. W. Vinal, & A. S. McDaniel, silver voltmeter, 153, 744
 Rosa, M. la, 228
 Rosa, M. la, & V. Cavallaro, photo-electrics, 129
 Rosanoff, M. A., C. W. Bacon, & R. H. White, vapour pressures, 1852
 Roschansky, D. A., 1104

- Roschdestwensky, 229
 Roschdestwensky, D., & A. Afanassieff, spectrum laws, 73
 Roscoe, Bunsen-, 1264
 Rose-Innes, J., light-velocity, 644
 Rosenhain, W., 1370; etching reagent, 1004
 Rosenhain, W., & J. L. Haughton, etching reagent, 1761
 Rosenheim, O., 1153
 Rosenthal, A., gas theory, 1552
 Rosenthal, I., 980
 Ross, A. D., 1447
 Ross, W. H., 571
 Rossi, R., spectrum, 457
 Rothenbach, M., 887
 Rowett, F. E., elasticity, 1026
 Rowland, I., 34, 1831
 Roy, Le, S. A., gramophone records, 918
 Royds, T., Fraunhofer lines, 1958
 Royds, T., & J. Evershed, sun's rotation, 31
 Rubens, 748, 753
 Rubens, H., 175, 456, 695, 705, 1563
 Rubens, H., & H. v. Wartenberg, residual rays, 693
 Rudeloff, struts, 1374
 Ruder, W. E., silicon steel, 780
 Rudge, W. A. D., atmospheric electrics, 1864; dust electrical machine, 336; electrification, 1573
 Rücker, 277
 Rümelin, G., ion recombination, 1098
 Ruer, R., & K. Kaneko, Fe-Co Alloys, 755
 Ruer, R., & R. Klesper, Fe transformations, 1916
 Ruff, 1992, 2026
 Ruff, O., H. Seiferheld, & J. Suda, refractory oxides, 1160, 2017
 Rukop, H., 949; electric spectrum, 324
 Rukop, H., & J. Zenneck, arc as generator, 821B; frequency transformation, 614B
 Runge, 1068
 Runge, C., 385, 457, 1524, 1530, 1680, 1682
 Runge, C., & W. Grottrian, spectra, 1528
 Runge, C., & F. Paschen, oxygen in sun, 827
 Russ, S., & W. Makower, β -rays from Ra A, 882
 Russell, A., dielectrics, 709*
 Russell, A. S., 95, 487
 Russell, A. S., & J. Chadwick, γ -rays, 489
 Russell, H. N., giant stars, 200; solar spectrum, 1810; stellar evolution, 1393, stellar spectra, 1391
 Rutherford, I., 143, 226, 460, 568, 667, 1247, 1680
 Rutherford, E., 93, 467, 475, 480, 567, 881, 1032, 1090, 1425, 1429, 1544; structure of atom, 570, 1031
 Rutherford, E., & E. N. da C. Andrade, γ -rays, 1543; reflected γ -rays, 254
 Rutherford, E., & J. M. Nuttall, α -particles, 252
 Rutherford, E., & H. Richardson, Th γ -rays, 487; γ -rays of RaD, 94
 Rutherford, E., & H. Robinson, β -rays, 251
 Rybár, S., reflection, 430
 Rybczynski, 180
 v. Rybczyński, W., 1313
 Rydberg, 457, 1831, 1832, 1909
 Rydberg, J. R., 225, 1070, 1680; ordinals of elements, 2012
 Rykatchew, M., meteorology, 398
 Sabine, W. C., 1564
 Sabouraud, 1341, 1342
 Sabouraud-Noire, 1743
 Sachorow, 993
 Sackur, O., 702, 2001
 Sadler, 1837
 Sagnac, G., 847; æther circulation, 65, 1506; reality of æther, 216
 Sahulka, J., cinematography, 428
 St. Chevalier, star photographs, 632
 St. John, C. E., 81; sun-spots, 194, 412
 St. John, C. E., & L. W. Ware, spectrometry, 654
 Saint-Venant, 1658, 1786
 Saladin, 758
 Sale, P. D., & G. K. Burgess, purity of Pt, 1625
 Salet, 1005
 Salet, P., & Millochau, chromosome, 1387
 Salmoud, R. W. A., reflected X-rays, 246
 Salomonson, J. K. A. W., string galvanometer, 545
 Samel, H., telemeter, 443
 Sampson, R. A., telescope, 60; time signals, 1773
 Sanborn, H. S., & A. E. Kennelly, heat convection, 1994
 Sanford, F., atomic charge, 763
 Sanford, R. F., & J. H. Moore, η Carinæ, 1229
 Saposchnikow, 536
 Saunders, 1680, 1992
 Sauveur, A., Fe transformations, 354
 Savinov, S. I., solar radiation, 25
 Saxer, A. H., flame ions, 1581
 Schaefer, 12
 Schaefer, C., 1594
 Schaefer, C., & G. Neumann, electrons, 922
 Schaffers, V., 1718; ionisation, 727
 Schalkwijk, 2000
 Schall, J. C., electrolysis, 1361

- Schall, W. E., X-ray dosage, 1743
 Schames, L., state equation, 1019, 1548
 Schaposchnikow, 993
 Schaposchnikow, A. V., A. Gudima, & V. Kutovski, nitrogen oxidation, 1453
 Schaposchnikow, K., 1408, 1516; light-pressure, 849, 1513
 Schaposchnikow, K., & M. v. Laue, relativity, 390
 Scheel, K., 264, 690, 1561
 Scheel, K., & W. Heuse, dilatation, 688
 Scheffer, F. E. C., 1283
 Scheiner, 610
 Schell, C., 230
 Schell, C., & C. Füchtbauer, spectra, 229
 Schenck, 1013
 Schering, H., & R. Schmidt, phase angle measurement, 45B
 Scheurer, 764
 Schidlof, A., & [Mlle.] A. Albert, hysteresis, 1145
 Schidlof, A., & A. Karpowicz, Hg droplets, 1569
 Schilowsky, 370
 Schindelbauer, F., 710; charge of ram, 930
 Schleicher, A. P., alloys, 1346
 Schlesinger, F., F. C. Jordan, A. H. Pfund, λ Tauri, 422
 Schmauss, A., 121
 Schmidt, 1869
 Schmidt, F., actino-dielectric effect, 1606
 Schmidt, G. C., passivity, 1646
 Schmidt, H. E., radio-dosemeters, 1342*
 Schmidt, K. E. F., wireless, 611B
 Schmidt, R., & H. Schering, phase-displacement, 45B
 Schmidt, W., meteorology, 607; standard barometers, 1367
 Schmiedel, K., measuring forces, 372
 Schoch, A. P., passivity, 1646
 Schoop, 992, 1911, 2029
 Schostakowicz, A. B., & A. W. Wosnesensky, meteorology, 1666
 Schottky, 1560
 Schottky, W., contact potential, 1600; discharge, 1587, 1686; recalescence, 995; thermionics, 1588, 1589
 Schramm, E., & J. L. R. Morgan, drop-weights, 1015
 Schrödinger, E., Debye-effect, 1423; dynamics, 1485; electric dispersion, 526; reflected X-rays, 680
 [Schükarew] Schükarev, A., magneto-chemistry, 1741
 v. Schütz, A., ether radiation, 220
 Schulz, W. F., stellar photometry, 51
 Schulze, A., 1278; vapour pressures, 501
 Schulze, G., passivity, 1646; valve cells, 1645
 Schulze, G., & R. Lindemann, valve cells, 1642
 Schumann, 14, 236, 1067, 1244, 1247, 1680, 1987
 Schupmann, L., telescope, 202
 Schuster, A., 350, 972, 2011; magnetic determinations, 1902; weather cycles, 1801
 Schwarzschild, K., 55, 198; atmospheric radiation, 21; Stark-effect, 665; Zeeman-effect, 664
 v. Schweidler, E., 98, 250, 514, 709, 743; ionisation, 1844
 v. Schweidler, T. Wulf, Dorno, Hess, & H. Benndorf, penetrating radiation, 931
 Schwes, F., & F. A. Lindemann, specific heats, 105
 Schwes, F., & W. Nernst, specific heats, 1084
 Schweydar, 1038, 1495
 Scott, W. M., & C. H. Mathewson, alloys, 776
 Scribanti, integrator, 1470*
 Ščukarev, A., magneto-chemical effects, 1741
 Seares, F. H., star magnitudes, 198; sun's magnetism, 35
 Searle, G. F. C., resistance comparison, 1325; surface tension, 818
 Sears, J. E., dilatation, 1081*
 Secchi, 27
 Seebeck, 1118
 Seeliger, R., 121; electric double layers, 960
 Seeman, H., photography, 1969
 Segol, E., J. Segol, and J. Pougnet, Weston cell, 745
 Segol, J., *vide* Segol, E.
 Seiferheld, H., O. Ruff, & J. Suda, refractory oxides, 1160, 2017
 Selényi, P., Faraday-effect, 1568; optics, 441
 Sellmeyer, 1258
 Senepa, P., galvanomagnetics, 754
 Senftleben, 1677
 Senter, G., 108; passivity, 1646
 Sentis, 1655
 Settnik, K., 324
 Sève, P., 1337; time signals, 1774
 Shakespeare, G. A., balance, 1472
 Shapley, H., eclipsing binaries, 47; RU. Camelopardalis, 54
 Shaw, A. N., & H. L. Callendar, Weston cell, 1324
 Shaw, P. E., measuring machine, 797
 Shaw, W. N., circulation of atmosphere, 1799; meteorology, 1489
 Shaxby, J. H., & E. Emrys-Roberts, Brownian motions, 1202
 Sheard, C., 1869; thermionics, 1706
 Sheard, C., & F. C. Blake, Lecher system, 1106

- Sheard, C., & D. A. Woodbury, thermionics, 134
 Shearer, G., & G. A. Carse, air potentials, 1095
 Shearer, J. S., 738
 Shepherd, E. S., 1754
 Shepherd, E. S., & A. L. Day, magmatic gases, 26
 Shields, 1280, 1655
 Shimizu, S., 1447
 Shipley, J. W., & T. W. Richards, thermometry, 892, 1850
 Shore, 1465
 Shorter, S. A., foaming solutions, 1635
 Shrader, J. E., radio-activity, 1547
 Shrimpton, A. G., at. wt. of Cu, 2013
 Sicklen, W. J. van, & S. W. Young, crystallisation, 769
 Sieg, L. P., & F. C. Brown, selenium, 1442, 1878
 Siegbahn, M., electromagnetics, 306; oscillograph, 1610; telephone membranes, 291
 Siegl, K., Grove cell, 365
 Siemann, ship stresses, 1476
 Siemens, 900
 v. Siemens, H., thermometry, 269
 Siemens and Halske, 1188
 Signorini, A., electric waves, 1701
 Silvey, O. W., discharge, 138
 Simeon, F., viscosity, 1021
 Simon, H. T., 944, 1264
 Simpson, G. C., 493, 930; charge of rain, 710; meteorology, 1036
 Sirk, H., discharge, 140
 Sissingh, R., & J. M. Byvoet, reflection, 1973
 de Sitter, W., light-velocity, 436, 846
 Sjöström, M., electric waves, 733, 1440
 Skaupy, F., electric conduction, 961, 1570
 Skinner, 718
 Slate, F., vector potential, 119
 Slater, W. E., C. Campbell, & H. B. Dixon, explosions, 1857
 Slipher, V. M., nebula, 426
 Slocum, F., & S. A. Mitchell, star parallaxes, 48
 Smirnof, V., & A. Fridmann, discharge, 1104
 Smith, 895, 1503
 Smith, A. W., thermomagnetics, 554
 Smith, F. E., 333, 744; dilatation, 1081; * resistance measurement, 955
 Smith, G. McP., diffusion, 1928
 Smith, H., discharge, 1593
 Smith, J., & W. Brown, torsion, 1027
 Smith, Jervis, F. J., 531
 Smith, O. F., & J. R. Wright, RaEm in atmosphere, 1990
 Smith, S. W. J., 1138
 Smithells, 1005
 Smits, A., electromotive equilibria, 1024
 Smits, A., & A. H. W. Aten, allotropy, 1762
 Smits, A., S. C. Bokhorst, & J. W. Terwen, vapour pressure, 1554
 Smits, A., & L. A. C. de Bruyn, critical point, 1018
 Smoluchowski, 98, 1308, 2033
 Société Genévoise, 1771
 Soddy, F., 95, 487, 1480, 1751; intra-atomic charge, 568; radio-elements, 170; UrY, 488
 Sommerfeld, A., 62, 284, 312, 880, 952, 1440, 1539; light propagation, 1413
 Sonaglia, C., Trouton's Rule, 1693
 Soné, T., 1137
 Soné, T., & K. Honda, magnetics, 1895; thermomagnetics, 1897
 Sorkau, W., turbulence viscosity, 12
 Sosman, R. B., 1117, 1851
 Sosman, R. B., J. C. Hostetter, & A. L. Day, rock densities, 375
 Southwell, R. V., 1652; elastic stability, 382; elasticity, 1651
 Speas, W. P., & R. W. Wood, fluorescence, 1075
 Speyers, C. L., & T. W. Richards, compressibility of ice, 1029
 Spies, P., Zeeman-effect, 835
 Spitaler, R., earthquakes, 30
 Spoerer, 1222
 Squier, 5
 Stadelers, A., annealed steel, 1915
 Stähler, A., & J. J. Elbert, nitrogen fixation, 1454
 Staehling, C., RaD separation, 767
 Stark, 661, 665, 1386, 1387, 1522, 1717, 1830, 1985
 Stark, J., 460, 652, 666, 667, 1056, 1060, 1070, 1245, 1419; canal rays, 713; atom charges, 762; "field canal rays," 714; He spectrum, 1532; series electrons, 1522; spectra, 74, 660; spectral series, 1416; Stark-effect, 238, 1255
 Stark, J., H. T. Clark, & A. W. Stewart, light-absorption, 652
 Stark, J., & H. Kirschbaum, Stark-effect, 1071
 Stark, J., G. Wendt, & H. Kirschbaum, canal rays, 75
 Starke, H., β -rays, 683; γ -rays, 684
 Stead, G., 1253
 Stead, J. E., critical points Ar_1 , Ar_2 , 359
 Stead, J. E., & H. C. H. Carpenter, electrolytic Fe, 355
 Steadman, F. M., photography, 1672
 Stebbins, 1395
 Stedman, E. W., & L. Bairstow, struts, 1781

- Steele, B. D., 587
 Stefan, 279, 289, 397, 545, 1091, 1851, 1432
 Steiner, L., earth magnetism, 1619
 Steinmetz, 1330
 v. Steinwehr, H., 784; silver voltmeter, 333
 v. Steinwehr, H., & W. Jaeger, Ag voltmeter, 1609; resistance units, 152
 Stern, O., 165, 346, 923, 1087; dissociation, 1638
 v. Sterneck, 1478
 v. Sterneck, R., tides, 28
 Steuart, D. W., & I. Jørgensen, atmospheric potential, 1704
 Steubing, W., 1254, 1536; fluorescence, 242, 471
 Stevens, H. C., & C. E. Magnusson, electrophysiology, 1906
 Stevenson, 403
 Stewart, A. W., W. T. Clark, & J. Stark, light-absorption, 652
 Stewart, G. W., sound, 304
 Stewart, G. W., & H. Stiles, sound, 1292
 Stewart, T. D., E. W. Osgerby, & R. C. Tolman, accelerated conductors, 1089
 Stiles, H., & G. W. Stewart, sound, 1292
 Stillman, M. H., setting of Hg surface, 802
 Stock, A., 269
 Stodola, A., steam-flow, 7B
 van der Stok, J. P., meteorology, 190
 Stokes, 116, 180, 677, 1478
 Stokes, J. P., 897
 Stokesbury, C. H., & C. H. Mathewson, Ag-Cu₂O system, 1347
 Stoletow, 1575
 Stoll, 264
 Stone, E. C., & J. L. R. Morgan, drop-weights, 185
 Stone, W. H., 921
 Storch, 785
 Storey, O. W., annealing castings, 1628; electrolytic Fe, 1913
 Strachan, E. K., & V. G. Chu, conductance of HI, 1933
 Stramp, L., photoelectrics, 1711
 Streintz, F., resistance of powders, 1596
 Stromeyer, C. E., fatigue limits, 1783; repeated stresses, 1092B
 Strong, W. W., nitrogen oxidation, 351
 Strouhal, 1567
 Strutt, 234, 351, 532, 533, 730, 979, 1099
 Strutt, R. J., 1715; colour of zircons, 494; discharge, 531; He-production, 1102; spectra, 1072; spectrum series, 1533
 Strutt, R. J., & H. B. Baker, active nitrogen, 979
 Strutt, R. J., E. Domcke, E. Tiede, & H. B. Baker, active nitrogen, 1624
 Struve, H., 40
 Stützer, R., telemeters, 834
 Stuhlmann, O., Jr., & K. T. Compton, photoelectrics, 127, 317
 Stuhlmann, O., & R. Piersol, photoelectrics, 1574
 Suda, J., O. Ruff, & H. Seiferheld, refractory oxides, 1160, 2017
 Sudzuki, T., & C. Otsuki, photography, 1975
 Sumner, 586
 Surdo, A. Lo, 667, 1060; dew, 1847; sky's temperature, 608; spectra, 1059; Stark-effect, 666
 Sutherland, 360, 1187
 Sutherland, W., 1197, 1910
 Suyehiro, K., stresses in plate, 1777
 Suzuki, S., regelation, 1848
 Svedberg, T., 98, 175, 361, 787, 1859, 2033; conductivity, 537; Poulsen arc, 743B
 Swaim, V. F., spectra, 1829
 Swan, 1681
 Swann, W. F. G., 690; atmospheric electricity, 516, 1303, 1865; conduction, 1086; dielectrics, 331; electric dispersion, 1703
 Swinton, A. A. Campbell, gramophone, 290
 Szarvassi, A., discharge, 944
 Szilard, B., electrometers, 964; lighting conductor, 1320; potential measurement, 959; X-ray dosage, 1622
 Tabellini, G., & M. Padoa, solution, 788
 Taboury, F., Fe-Zn alloys, 1756
 Taege, E., short spark-gaps, 729
 Tafel, 1173
 Taffanel, 1856; combustion, 281, 906
 Taffanel & Le Floch, combustion, 280
 Tainton, U. C., & J. N. Pring, electrolysis, 1172
 Taït, 1118
 Takagi, H., magnetics, 1898; thermomagnetics, 1896
 Takagi, H., & K. Honda, steel, 356
 Takamine, T., 1535; pendulum, 1478
 Takamine, T., & H. Nagaoka, crossed spectra, 77; Zeeman-effect, 867, 1839
 Takamine, T., & K. Yamada, red Li line, 1836; Zeeman-effect, 1682
 Take, 553
 Talamo, F. L., discharge, 143
 Tamaki, K., relativity, 9, 68
 Tammann, G., 816, 1124, 1918, 1925, 2025; latent heat, 268; polymorphism, 983; polymorphism of water, 287; water equilibrium, 109
 Tammann, G., & U. Raydt, Fe-Zn alloys, 2024; Mo-Co alloys, 2022

- Tanatar, S., & E. Burkser, chemical reactions, 1747
 Tangl, K., 538, 539; surface tension, 602
 Tassilly, E., nickel-plating Al, 1764
 Tassilly, E., & J. Canac, electrolysis, 790
 Tate, 1209
 Taylor, 206
 Taylor, H. O., sound, 295
 Tebb, C., 1153
 Terada, T., 676, 1803, 1825; isobars, 1487; rock-salt crystals, 1654
 Terwen, J. W., A. Smits, & S. C. Bokhorst, vapour pressure, 1554
 Tesla, 1107
 Tetens, O., H. Kobold, & P. Harzer, meridian circle, 800
 Tetrode, H., 702
 Thibaut, R., lead accumulator, 508B
 Thieme, B., interrupter, 158
 Thirring, H., specific heat, 266, 904, 905
 Thomas, G., hydrodynamics, 388
 Thompson, J. H., & A. H. Gibson, "suction" between vessels, 187
 Thompson, S. P., 928, 1181; dispersion, 1517; vision, 1670
 Thomsen, 1849
 Thomson, 93, 255, 395, 397, 475, 518, 647, 667, 703, 900, 970, 1047, 1066, 1120, 1603, 1681 1846
 Thomson, J. J., 13, 15, 127, 174, 331, 351, 493, 516, 727, 810, 900, 981, 1047, 1144, 1247, 1301, 1304, 1336, 1575, 1727, 1832, 1857; atomic structure, 391; interatomic forces, 1910; recent discoveries, 1197; structure of atom, 14
 Thornton, W. M., dielectrics, 149; explosions, 1692; gas ignition, 1557
 Thorp, 45
 Thorpe, 277, 1357
 Thurston, A. P., aero-dynamics, 1947; air-resistance, 908B
 Tichov [Tikhoff], G. A., cyanometer, 1669
 Tiede, 730
 Tiede, E., & F. Domcke, active nitrogen, 979
 Tiede, E., R. J. Strutt, E. Domcke, & H. B. Baker, active nitrogen, 1624
 Tieri, L., 1411
 [Tikhoff] Tichov, G. A., cyanometer, 1669
 Tillyer, E. D., lens-testing, 205
 Timiriazeff, A., 1308
 Timofeeff, G., cold-worked Zn, 991
 Titoff, L., magnetic testing, 520B
 Tizard, H. T., 1299
 Tolman, R. C., similitude, 1195; specific heats, 1691
 Tolman, R. C., E. W. Osgerby, & T. D. Stewart, accelerated conductors, 1089
 Townsend, J. S., 532, 715, 716, 933, 1099, 1299, 1710, 1714, 1876; discharge, 532
 Townsend, J. S., & P. J. Edmunds, discharge, 1595
 Traube, I., 279; critical state, 1020
 Trautz, M., specific heat, 903
 Travers, 108
 Treub, J. P., 1283
 Trevor-Williams, G. T., 1026
 Tristan, J. F., & G. Michaud, colouring of flowers, 444; eye under u.v. rays, 1511
 Trouton, 1009, 1637, 1693
 Trowbridge, 730
 Trümpler, R., star-places, 201
 Tucker, 1021
 Tucker, R. H., refraction, 1221
 Tugman, O., photography, 1976
 Turner, H. H., detecting discontinuities, 828; sun-spot numbers, 39; sun-spot periodicity, 408
 Turner, T., & T. K. Nair, volatility of Zn, 353
 Turner, W. E. S., & C. C. Bissett, solvent power, 2032
 Tuttle, 634
 Twining, R. H., & G. F. White, viscosity, 798
 Twomey, T. J., G. A. Perley, & H. A. Robinson, photography, 1055
 Tyndall, 434, 437, 1822
 Tyndall, A. M., & H. G. Hughes, kathode disintegration, 1101
 v. Ubisch, G., 1677
 Uller, K., dynamics, 1184
 Ullmann, E., 720
 Umow, N., quantum theory, 1192
 Ungerer, A., film conductivity, 148
 Urbain, G., & J. Blumenfeld, spectrum, 1834
 Uspenski, N., & G. Wulff, reflected X-rays, 88, 89
 Vaillant, C., radiography, 1982
 Vaillant, P., drop size, 1209; polarisation capacity, 789
 Valentiner, S., refraction, 1046
 Valentiner, S., & W. Mecklenburg, cloudiness, 1822
 Valentiner, S., & O. Zimmer, refraction, 435
 Vaillauri, G., 340
 Valson, 186, 1015
 Van Heurck, 642
 Van Name, R. G., rheostat, 2009
 Van Sicklen, W. J., & S. W. Young, crystallisation, 769
 Vaschy, 970
 Vassileff, S., [Mlle.], & C. E. Guye, internal friction, 1185
 Vaucher, A., musical scale, 300, 1698
 Vegard, L., 1586

- v. Vegesack, A., 1756
 Vehrings, W., & K. Baedeker, thermoelectrics, 1729
 Venant, Saint, 1658, 1786
 Vercelli, F., heat conductivity, 1431
 Véronnet, A., earth's cooling, 1218 ; solar heat, 1954 ; sun, 1224
 Verschaffel, A., micrometer, 613
 Very, F. W., 23 ; earth's albedo, 414 ; solar radiation, 404
 Viefhaus, H., spectrometry, 855
 Vieweg, V., dynamometer, 1471
 Vigoroux, E., 1756
 Villard, 1449
 Villemontée, G. G., dielectrics, 1444, 1445
 Vinal, G. W., 1609
 Vinal, G. W., & S. J. Bates, Ag voltmeter, 1608
 Vinal, G. W., A. S. McDaniel, & E. B. Rosa, Ag voltmeter, 153, 744
 Viola, 1503
 Vogel, 610
 Vogel, H., viscosity, 1187
 Vogt, K., & J. Koenigsberger, spectra, 860
 Voigt, W., 240, 309, 441, 667, 926, 1066, 1069, 1336, 1677 ; refraction, 62 ; Zeeman-effect, 82, 1257
 Vojtkevič-Poliakova, H. B., nova, 623
 Volta, 739, 1885
 Vorländer, D., 1923 ; liquid crystals, 845
 Vosmaer, A., brush discharge, 322
 van der Waals, J. D., critical point, 998 ; energy-partition, 284, 1695 ; volume of molecules, 1352
 Wachsmuth, R., 730, 1590
 Wachsmuth, R., & B. Winawer, discharge, 136
 Wadsworth, 58
 Wächter, F., electronic charge, 1298
 Waelsch, electrodynamics, 118, 512
 Waetzmann, E., combination tones, 294 ; sound, 1297 ; sound resonance, 916
 Wagner, A. F., magnetisation, 1613
 Wagner, E., 714, 2015
 Wagner, E., & R. Glocker, reflected X-rays, 873
 Wagner, E., & J. Kutschewski, field-canal rays, 123
 Wagner, K. W., dielectric lag, 514 ; dielectrics, 1302
 Waidner, C. W., H. C. Dickinson, & J. J. Crowe, temperatures near icebergs, 1951
 Walden, 268
 Walden, P., 279, 1859, 1910, 2032 ; conductivity, 1010, 1931
 Wali-Mohammad, C., spectrum, 1252
 Walker, G. T., 707
 Walker, G. W., radiation, 705, 1287 ; terrestrial magnetism, 972
 Walker, J., aberration, 1048 ; reflection, 851
 Walker, W. J., viscosity, 1165
 Wallach, R., magnetics, 1900
 Wallerant, F., 845 ; optics, 853
 Wallgren, 98
 Walmsley, H. P., actinium, 101
 Walstra, K. W., gas isotherms, 2000
 Walstra, K. W., & P. Kohnstamm, gas isotherms, 1999
 Waltenberg, R. G., & G. K. Burgess, melting-points, 1995
 Walter, B., X-ray protectives, 1343
 Walter, L. H., electrolytic luminosity, 1730 ; valve action of Zr, 367
 Warzel, 1786
 Warburg, E., 665, 901, 1245 ; spectrum, 460
 Ware, L. W., 81
 Ware, L. W., & C. E. St. John, spectrometry, 654
 v. Wartenberg, H., & L. Mair, ozone formation, 1353
 v. Wartenberg, H., & H. Rubens, residual rays, 693
 Wassmuth, A., state equation, 915
 Waterman, E. P., star spectra, 420
 Watson, E. A., 1595, 1718
 Watson, F. R., acoustics, 1564 ; auditorium acoustics, 297
 Watson, H. E., & G. Pal, radio-activity, 1688
 Watson, J. E., 457
 Watson, W., colour-blindness, 650 ; colour vision, 1675 ; compressibility, 1925
 Watson, W., & W. de W. Abney, colour vision, 446
 Watson, W. H., glow of sulphur, 768
 de Watteville, C., spectrum, 1531
 Watts, O. P., & M. H. Li, electrolysis, 1768
 Watts, W. M., spectra, 1681
 Weber, 753, 1562
 Weber, S., vapour pressure of CO₂, 271
 Weber, S., & H. K. Onnes, vapour pressure of CO₂, 270
 Webster, A. G., physical science, 604
 Wedekind, E., borides, 2018 ; zirconium, 2021
 Wedekind, E., & P. Hausknecht, magnetic Ti compounds, 347
 Wedemeyer, F., & W. Köppen, troposphere, 1211
 Wegscheider, 506
 Wehnelt, 718, 1743, 1867, 1873
 Wehnelt, A., & E. Liebreich, thermionics, 135
 Weibel, E., & F. Wenner, potentiometers, 1889
 Weidert, F., periscopes, 1043
 Weigert, F., Hittorf model, 978
 Weinstein, B., mechanics, 1204

- Weiser, H. B., & W. D. Bancroft, flame reactions, 1005, 1467
 Weiss, 343, 345, 392, 752
 Weiss, L., 2018, 2021
 Weiss, P., 163, 240, 558, 1137, 1142, 1337, 1894, 1896; molecular field, 557, 756
 Weiss, P., & A. Piccard, magnetochemistry, 562
 Weiss, P., & K. Renger, magnetism, 1735
 Weissenberger, A., thermoelectrics, 738
 Wellisch, E. M., Ra deposit, 249
 Wendt, G., J. Stark, & H. Kirschbaum, canal rays, 75
 Wenner, F., & E. Weibel, potentiometers, 1889
 Werner, H., spectrometry, 1242
 Werner, M., polymorphism, 2025
 Werner, S., photoelectrics, 315
 Wernicke, 1502
 Wertenstein, L., 258
 Wertheimer, E., Volta-effect, 739
 v. Wesendonk, K., thermodynamics, 506, 1288
 Westgren, A., solution, 787
 Weston, 153, 333, 744, 745, 1324, 1640
 Westphal, W. H., Stefan's law, 289; Wien's law, 698
 Wetthauer, A., & H. Fassbender, objectives, 204
 Wetzel, R. A., relativity, 8
 Wheatley, F. W., ionisation, 716
 Wheaton, T. C., & D. F. Calhane, electro-analysis, 791
 Wheeler, R. V., 1281
 Wheelock, F. E., 321, 712
 Whiddington, R., 14, 86, 245, 948, 1264; kathode rays, 313, 1307
 White, 106
 White, A. J., electro-analysis, 795
 White, G. F., 784, 1357
 White, G. F., & R. H. Twining, viscosity, 798
 White, G. W., selenium, 1112
 White, R. H., C. W. Bacon, & M. A. Rosanoff, vapour pressure, 1852
 White, W. P., thermoelectrics, 2008
 Whitehead, 1860
 Whytlaw-Gray, R., radium D, 95
 Wick, F. G., fluorescence, 1409
 Widmanstätten, 1912
 Widmer, J. A., & J. A. Fleming, magnetometer, 1620
 Wiechert, 514, 824
 Wiedemann, 339, 455, 536, 751, 1082, 1120, 1339
 Wiedemann, G., 1306
 Wiedmann, G., & W. Hallwachs, photoelectrics, 722
 Wiegrefe, A., optics, 649; reflection, 1512
 Wien, 909, 1287, 1289, 1550, 1563, 1851
 Wien, W., 305, 440, 705; Doppler-effect, 1073; Zeeman-effect, 661
 Wietzel, G., thermoelectrics, 1115
 Wigand, A., air conductivity, 1096; solar spectrum, 618
 Wild, 403
 Wild, L. W., magnetisation, 552
 Wilde, H., 761
 Wilke, E., hydrogen electrode, 1025
 Wilke, E., & H. Handovsky, Tyndall phenomenon, 437
 Williams, A. S., Algol variable, 1397
 Williams, I., heat conductivity, 262
 Williams, N. H., magnetisation, 1138
 Williams, S. R., ferromagnetics, 338; Wiedemann-effect, 339
 Williams, Trevor, G. T., 1026
 Willows, R. S., 521, 1869
 Wills, 1337
 Wilsar, 1245
 Wilson, 93, 174, 1321
 Wilson, C. T. R., 283, 1031, 2006
 Wilson, E., magnetisation, 1330, 1736
 Wilson, H. A., 1867; Hall-effect, 1448; X-rays, 1077
 Wilson, H. C., star motions, 1499
 Wilson, R. E., radial velocity stars, 1961
 Wilson, R. H., & E. Marsden, actinium C, 100; Th deposit, 97
 Wilson, W., 948, 1708; thermionics, 726
 Wilton, J. R., sound, 298; waves, 815
 Winawer, B., 1590
 Winawer, B., & R. Wachsmuth, discharge, 136
 Winchester, G., 718; vacuum tubes, 1312
 Winter, W., electrolytic rectifiers, 154
 Winternitz, P., vapour pressure, 1637
 Winternitz, P., and v. Kohnner, hydrogen, 1636
 Winther, C., fluorometer, 59
 Witte, H., Sagnac-effect, 847
 Wittorf, 2026
 Wykander, 807
 Wöhler, 1783
 Wolf, 39, 175, 192, 408, 828
 Wolf, K., electric waves, 145
 Wolfer, 192
 Wolfer, A., sun-spots, 192
 Wolff, 1825
 Wolff, K., spectra, 239
 Wolff, R., 1830
 Wolff, W., 5
 Wolfke, M., quantum theory, 445; radiation, 1291
 Wolf-Rayet, 1040, 1247, 1818
 Wolz, K., calibration marker, 1176; measuring apparatus, 1177
 Wommelsdorf, H., static machine, 749
 Wood, 1042
 Wood, A. B., ThC recoil atoms, 258
 Wood, A. B., & E. Marsden, molecular weights, 765

- Wood, R. W., 73, 147, 222, 444, 1125, 1811, 1830; D-lines, 1250; monochromatic illumination, 1063; resonance spectra, 223, 224, 1683; sodium flame, 1064
- Wood, R. W., & L. Dunoyer, D-lines, 1527; resonance Na-lines, 1239, 1240, 1526
- Wood, R. W., & G. A. Hemsalech, fluorescence, 1987
- Wood, R. W., & G. Ribaud, magneto-optics, 1536
- Wood, R. W., & W. P. Speas, fluorescence, 1075
- Woodbury, D. A., & C. Sheard, thermionics, 134
- Woodrow, J. W., photoelectrics, 525
- Woodward, 594
- Worley, R. P., surface tension, 1164
- Wosnessensky, A. W., & A. B. Schostakowicz, meteorology, 1666
- Wourzel, E., action of RaEm, 764; ammonia decomposition, 1158
- v. Wrangell, M., 2018
- Wrede, 108
- Wright, 1576
- Wright, F. E., quartz crystals, 393; refraction, 1503; refringence of grains, 1962
- Wright, J. R., 493
- Wright, J. R., & O. F. Smith, RaEm in atmosphere, 1990
- Wright, W. H., comet, 1226
- Würschmidt, J., dilatation, 263
- Wüst, F., & H. Meissner, cast-iron, 1001
- Wulf, 492, 493, 546
- Wulf, T., v. Schweidler, Hess, Dorno, and H. Benndorf, penetrating radiation, 931
- Wulff, G., 89
- Wulff, G., and N. Uspenski, reflected X-rays, 88, 89
- Wurmser, 221
- Yamada, K., magnetisation, 166
- Yamada, K., & T. Takamine, red Li-line, 1836; Zeeman-effect, 1682
- Yensen, T. D., magnetisation, 1616
- Young, 376, 1283, 2003
- Young, S., 1009, 1859
- Young, S. W., & L. W. Pingree, suspensions, 783
- Young, S. W., & W. J. Van Sicklen, crystallisation, 769
- Young, T., 279
- Ytterberg, A., hysteresis curves, 516B
- Zahn, H., 554, 754; spectra, 455; thermomagnetics, 556, 1862
- Zakrzewski, 448
- Zeeman, 34, 35, 238, 240, 468, 474, 655, 661, 662, 663, 664, 752, 861, 864, 866, 1056, 1070, 1247, 1255, 1256, 1257, 1386, 1416, 1522, 1534, 1535, 1536, 1682, 1830, 1836, 1839, 1985
- Zehnder, L., radiation theory, 507
- Zeipel, 633
- Zeleny, J., 174, 1876; discharge, 1103
- Żemczużny and Kurnakow, plastic bodies, 1780
- Żemczużny, S. F., 1917
- Zemczuzny, S. F., Cd-As alloys, 1163
- Zenneck, J., 143, 1642; arc oscillations, 1105; frequency transformation, 356B
- Zenneck, J., & H. Riegger, sound, 1293
- Zenneck, J., & H. Rukop, arc as generator, 821B; frequency transformation, 614B
- Zimmer, O., 1046
- Zimmer, O., & S. Valentiner, refraction, 435
- Zimmermann, F., Os-Pt alloy, 494B
- Zoeppritz, 29
- Zschimmer, E., strained glass, 438
- Zsigmondy, R., gelatinous structures, 1006; ultramicroscope, 636
- Zublena, S., electro-analysis, 1174
- Zwaardemaker, H., hearing apparatus, 303; sound selection, 302

SUBJECT INDEX.

SECTION A.—PHYSICS.

To facilitate reference to any desired subject, the Index is divided into the following sections arranged alphabetically. If any of these are absent this may be taken as an indication that no Abstracts dealing with those particular subjects have been included in this volume.

Where phenomena such as the Hall-effect, Thomson-effect, Zeeman-effect, etc., are mentioned in an Abstract but not in the Title, the reference will be found in the Name Index.

The numbers refer to Abstracts; if the letter B follows a number the Abstract will be found in Section B under that number.

In General Physics :—Apparatus and Instruments (physical, excluding electrical, descriptive); Astronomy; Diffusion; Dynamics; Elasticity; Gravity; Measurements and Use of Instruments; Meteorology, &c.; Miscellaneous; Molecular Physics, Matter and Ether; Pressures (high and low); Surface Tension; Terrestrial Physics; Theories; Viscosity.

In Light :—Absorption; Dispersion; Interference; Measurements and Use of Instruments; Miscellaneous; Phosphorescence and Fluorescence; Photography; Photometry; Polarisation; Radio-activity; Rays and Radiation; Reflection of Light; Refraction of Light; Spectra; Vision; Zeeman-Effect and Radiation in a Magnetic Field.

In Heat :—Absorption; Conductivity; Critical Points and Constants; Dilatation; Freezing, Melting, and Boiling-Points; Gases and Vapours; Measurements and Use of Instruments; Miscellaneous; Specific Heat and Latent Heat; Temperature; Temperatures (high and low); Thermodynamics; Thermometry, Pyrometry, and Calorimetry; Vapour Pressure.

In Sound :—All Abstracts referring to this subject have been indexed under *Sound*.

In Electricity and Magnetism :—Absorption; Alternate-Current Research; Apparatus and Instruments (descriptive); Capacity (electrostatic); Conductivity and Resistivity; Dielectrics; Discharge in Gases and in Vacuo; Electromagnetic Theory; Inductance (self and mutual); Magnetism; Measurements and Use of Instruments; Electro-Physiology and Radiography; Miscellaneous; Oscillations and Waves; Polarisation (electric waves); Polarisation (electrolytic); Static and Atmospheric Electricity; Terrestrial Magnetism and Electricity; Thermo-Electricity and Thermo-Magnetism

In Chemical Physics :—Absorption; Alloys; Batteries (primary); Batteries (secondary); Chemical Equilibrium; Dissociation and Ionisation; Electric Furnace Processes; Electrolysis; Electrolytic Analysis; Metallography and Properties of Metals; Miscellaneous; Osmosis; Solution and Solubility.

Abstract Nos.

Absorption (Chemical Physics).

Acetylene, Adsorption of, by Palladium-black. C. Paal and C. Hohenegger	1746
Adsorption, Theory of. A. Eucken	1468
Coefficients of Adsorption, Absolute Measurement of. J. Bancelin... ..	1930
Gases, Absorption of, by Charcoal at Low Temperatures. G. Claude	1154
" , Noble, Properties of. G. Gehlhoff	171
Hydrogen, Behaviour of, towards Palladium. A. Gutbier, H. Gebhardt, and B[erta] Ottenstein	1748
" , Rate of Solution of, by Palladium. A. Holt	1907

Absorption (Light and Heat).

Absorbing Power and Polarisation, Relation of. A. Boutaric	1964
Actino-dielectric Effect. F. Schmidt	1606
Arc, Absorbing Power of, for its own Radiations. G. Gouy.....	1251
Atmosphere, Theory of Light-absorption in. M. Milankovitch	850

Alternate-current Research, *continued.*

Measurements, <i>see</i> separate section.	
Phase Angle of High-resistance Wires, Measurement of. H. Schering and R. Schmidt	45B
Rectifiers, Mercury. W. Jaeger	1887
Telephonic Galvanometer, Sensibility of. R. Arno.....	1205B
Transformation of Frequency of Alternating Current. J. Zenneck.....	356B
J. Zenneck	614B

Apparatus and Instruments (Electrical, Descriptive).

Anemometer and Instruments (Electrical, Descriptive).	H. Gerdien	155
Atmospheric-electric Instruments, New.	W. F. G. Swann	1865
Cadmium Arc, Enclosed.	T. M. Lowry and H. H. Abram	1827
Cryomagnetic Investigation of Substances of Small Permeability, Apparatus for.	H. K. Onnes and A. Perrier	969
Deflector, C.I.W., for determining Magnetic Horizontal Intensity. L. A. Bauer and J. A. Fleming		1147
Dust Electrical Machine.	W. A. D. Rudge	336
Electrodynameter, Reflecting.	A. Palm	746
Electrometer of High Sensitiveness.	G. Hoffmann	549
Electrostatic Generator, New, for High-tension Direct Current.	H. Wommelsdorf	749
Furnace, Gran-Annular Electric.	Z. Jeffries	1156
" , Graphite, Cascade Attachment for.	E. F. Northrup	1612
Glow-lamp, New Form of.	H. Greinacher	591B
High-frequency Currents and Voltages, Instruments for.	W. H. Eccles	1109
Inductions, High, Measurement of, by Yoke Method.	E. Gumlich	1333
Intensimeter, Furstenau's, for Measuring Intensity of X-Rays. Immelmann		1340
Interrupter for Heavy Currents.	B. Thieme	158
Magnetic Theodolite, Universal.	N. Ogloblinsky	750
Magnetometer and Earth Inductor, C.I.W. Combined.	J. A. Fleming and J. A. Widmer	1620
Measuring Machine, Electrical.	P. E. Shaw	797
Mercury Lamp.	Billon-Daguerre, L. Medard, and H. Fontaine	548
Model, Water, of Musical Electric Arc.	W. Duddell	1131
Optophone, Reading.	E. E. Fournier d'Albe	337
" , Type-reading.	E. E. Fournier d'Albe	1501
Oscillograph, Discharge-tube.	H. Greinacher	937
" , Electrostatic.	H. Ho and S. Koto	547
" , Interference.	A. Guyau	1731
" , Kathode-ray.	A. Dufour	1326
Photoelectric Cell, Sensitive.	A. L. Hughes	966
Pyrometers, <i>see</i> section Thermometry.		
Radio-active Measurements, Apparatus for.	B. Szilard	964
" -micrometer, Astatic Vacuum.	K. P. Jakovlev	157
Relay, New Current-magnifying.	E. Reisz	350B
Resistance Standards, Primary Mercurial.	J. Obata	1890
Rheostat for Large Currents.	R. G. van Name	2009
Röntgen-ray Tube, Powerful, with Pure Electron Discharge.	W. D. Coolidge	564
Thermoelectric Measurements, especially for Calorimetry.	W. P. White	2008
Thermogalvanometer, New Type of.	F. W. Jordan	1611
Thermometers, <i>see also</i> section Thermometry.		
Thermopile, Rapid.	W. J. H. Moll	747
Thermopiles, Sensitive.	E. S. Johansen	748
Time Signals, Distribution of.	P. Sève	1774
Vacuum Regulator, Osmo-antikathodic, in Röntgen-ray Tubes.	C. Regaud	1449
" Tubes, "Villard"		977

For the **Explanation** of this Index see p. 755.

Apparatus and Instruments (Physical, excluding Electrical, Descriptive).

Actinometer, Bimetallic, Improvements in. W. Michelson	371
Air-pump, New Piston. W. Gaede.....	796
Analysis of Very Small Quantities of Gas. P. A. Guye and F. E. E. Germann.....	1924
Anemometer, Electrical. H. Gerdien.....	155
Astrolabe, Mirror. H. Chrétien	1402
„ „ Photographic Prismatic. R. Baillaud	1234
Balance, Modifications of, for Quickness of Weighing. G. A. Shakespear	1472
Calibration Marker for Chemical Apparatus. K. Wolz	1176
Cloudiness, Measurement of. W. Mecklenburg and S. Valentiner ..	1822
Cyanometer. G. A. Tichov	1669
Dark-ground Illumination, Lateral. G. Guglielmo	1404
Division Corrections of Toothed Wheels. F. Göpel	1366
Dynamometer, Optical Torsion. V. Vieweg.....	1471
Fatigue Limits, Determination of. C. E. Stromeyer	1783
Forces, Instrument for Measuring. K. Schmiedel	372
Gas Isotherms up to 3000 Atmospheres. P. Kohnstamm and K. W. Walstra	891
Grating, Plane, for Stellar Spectroscopy. J. S. Plaskett.....	58
Gyroscope, Gardner's	588
Gyroscopic Monorail Car, Schilowsky	370
Gyrostatic Devices for Control of Moving Bodies. J. G. Gray.....	1649
Integrator, Improved Form of. J. G. Johnstone	1470
Longitude, Photographic Determination of. G. Lippmann	1380
Luminescence, Photometry of. F. v. Hauer and J. v. Kowalski	1076
Measuring Machine, Electrical. P. E. Shaw	797
„ „ „ New. F. Göpel	1365
„ „ Machines, Large, of Société Générale	1771
Micro-balance for Determining Densities of Gases. F. W. Aston ..	587
Micrometer, Transit, with Personal Equation. A. Claude and L. Driencourt	177
Microscope, Leitz's New Binocular. F. Jentzsch	638
Micro-telescope, Davon. C. V. Boys	836
Model for Demonstrating Migration of Ions. F. Weigert.....	978
„ „ Illustrating Zeeman-effect. P. Spies.....	835
„ „ Light-emission. E. Gehrcke	1056, 1057
Monochromator. M. Berek and F. Jentzsch.....	837
Periscopes for Submarines, Development of. F. Weidert	1043
Phonograph with Motor-drive and Repeat Action. R. Pösch	1296
Photometer for Small Areas. P. G. Nutting and L. A. Jones	1823
Pressure Variations due to Explosions in Tubes. J. D. Morgan	1647
Prism with Curved Faces. C. Féry.....	1236
„ „ New, with Curved Faces. A. Callier	57
„ „ Total-reflection. K. Pritschow	427
Pump, Automatic Mercury. Klein	1175
Pyrometers, Optical, <i>see also</i> section Thermometry.	
Radiation, Absolute Measurement of. C. Winther	59
Radiometer for a Monochromator. W. W. Coblentz and C. Leiss...	639
Rains, Heavy, recording Rate of Fall of. E. Esclançon	1364
Slide-rule, New Chemist's. H. R. Lee	1155
Sounding Instrument, Piezometric. A. Berget	1363
Spectrograms, Measuring Apparatus for. K. Wolz.....	1177
Spectrograph. C. Leiss	637
„ „ Coudé, at Vienna. A. Hnatek	1403
„ „ Grating, for Radial Velocities. M. Hamy	203
Spectrophotometer, Polarisation, with Brace Prism. H. B. Lemon...	1237
Spherical Triangles, Instruments for Solving.....	586
Stereo-comparator, New Reference Mark in. C. Pulfrich.....	1772
Telemeters, New, with Absolute Correction. R. Stützer	834

For the **Explanation** of this Index see p. 755.

Apparatus and Instruments (Physical, excluding Electrical, Descriptive), <i>continued</i> .	
Telescope, Adjustment of, by Auto-collimation. G. Lippmann	640
" , Medial, of Short Focus. L. Schupmann.....	202
Testing Machine, Hot-shortness, for Aluminium. A. B. Norton	1938
Thermometers, <i>see</i> section Thermometry.	
Ultramicroscope, Immersion. R. Zsigmondy	636
Undagraph, Wave-counter. O. Klotz	24
Wind-pressure, Instrument to Measure. Giessen	1473
Astronomy.	
Albedo of the Earth. F. W. Very	414
Algol-type Variable, New, in Pegasus. A. S. Williams	1397
α Andromedæ, Enhanced Lines of Mn in Spectrum of. F. E. Baxandall	1394
Aurigæ, Variable Star VV (17.1912). H. G. S. Barrett	1816
Binaries, Eclipsing, Orbits of. H. Shapley	47
" , Spectroscopic, and Velocity of Light. R. S. Capon	1815
Binary Systems, Parallax of. S. G. Cederstrand	425
Camelopardalis, RU, Variation of. H. Shapley	54
α Canum Venaticorum, Spectrum of. A. Belopolsky	52
Capella, Faint Companion to. R. Furihjelrn	831
η Carinæ, Spectrum of. J. H. Moore and R. F. Sanford	1229
δ Cephei and ζ Geminorum, Variations of Spectrum of. I. Lehmann	1395
" , Orbit of. J. H. Moore	1232
Chromosphere, Eclipse Spectrum of. S. A. Mitchell	616
" , Spectrum of. P. Salet and Millochau	1387
Comet Brooks (1911c), Photographic Observations of. C. C. Kiess ..	1227
" " " , Reflected Rays from. S. V. Orlov.....	415
" " " , Spectrum of. W. H. Wright	1226
" Metcalf (1913b), Spectrum of. J. Bosler	196
Comets, Capture of, by Jupiter. Fessenkoff.....	1225
Cosmic Dust in Solar System. B. Fessenkoff	1390
Cygni 97.1910, Variable Star, Observations of. E. E. Barnard	49
Cygni, XZ, Short-period Variable. C. Martin and H. C. Plummer...	1398
Dark Regions in the Sky. E. E. Barnard	631
Double-star Observers, Magnifying Powers for. T. Lewis	418
Fraunhofer Lines, Displacements of, to Violet. T. Royds	1958
" " , General Displacement of. W. H. Julius	1957
Hydrogen Line, New, λ 686. E. B. Frost	1960
Jupiter, Equatorial Current of. T. E. R. Phillips	1039
" , Rotation of. H. E. Lau	40
Lunar Crater Eimmart, Change in. W. H. Pickering	617
" Diurnal Variations of Terrestrial Magnetism. S. Chapman ...	350
Lyræ, RR, Cluster Variable. C. C. Kiess	1230
Mars, Heat Radiation in Atmosphere of. M. Milankovitch	1811
Moon's Longitude; Dependence of Gravitational Attraction on Chemical Composition. C. V. Burton	1660
Nebula Spectrum, Hydrogen and. J. W. Nicholson	1396
" , Andromeda, Radial Velocity of. V. M. Slipher.....	426
" " , (N.G.C. 224), Light-curve of. J. H. Reynolds ...	1041
" , North America, Parallax of. E. B. Andersen.....	199
" , Orion, Radial Velocity of. H. Bourget, H. Buisson, and C. Fabry	1819
" , Orion, Temperature of. H. Bourget, C. Fabry, and H. Buisson	1401
" , Tuttle's, Changes in. Borrelly	634
Nebulæ and Clusters, Statistics of. C. V. L. Charlier.....	423
" , Atomic Weight of Elements in. J. W. Nicholson	1820
" , Constitution of. J. W. Nicholson	1818
" , Distribution of. E. A. Fath	1233
" , Energy of, and Carnot's Principle. H. Block	55
" , New, and Variable Stars. C. R. D'Esterre	424

For the Explanation of this Index see p. 755.

Astronomy, continued.

Stars, Distribution of, and Spectral Type.	A. S. Eddington.....	1392
" , Giant and Dwarf.	H. N. Russell	200
" , Motion of.	C. V. L. Charlier	43
" , North Polar, Photographic Magnitudes of.	S. Chapman and P. J. Melotte	625
" , Numbers of, in Different Galactic Latitudes.	S. Chapman and P. J. Melotte	1814
" , Peculiar Variable.	E. C. Pickering	1399
" , Radial Velocities of 915.....		1498
" , Selected, Photographic Magnitudes of.	C. H. Gingrich	197
" , Total Light of.	S. Chapman	1817
" , Variable, of Cluster Type.	H. C. Plummer.....	46
" , Wolf-Rayet, Spectra of.	J. W. Nicholson	1040
Stellar Atmospheres, Rapid Convection in.	W. W. Campbell.....	1959
" , Evolution, Probable Order of.	H. N. Russell	1393
" , Parallaxes.	F. Slocum and S. A. Mitchell.....	48
" , Photographic Photometry.	S. Chapman and P. J. Melotte ..	626
" , Photographs; Atmospheric Dispersion Influences.	St. Chevalier.....	632
" , Photometry with Photoelectric Cell.	W. F. Schulz	51
" , Spectra and Cosmical Evolution.	H. N. Russell	1391
" , " , and Proper Motions, Variations of.	W. S. Adams ..	832
" , " , with Bright Hydrogen Lines.	P. W. Merrill.....	419
" , " , Bright Hydrogen Lines in.	P. W. Merrill	622
" , " , Colours and Parallaxes, Correlation of.	P. Nashen ..	1231
" , " , Europium Lines in.	F. E. Baxandall	624
" , " , Magnesium Lines in.	F. E. Baxandall.....	1228
" , Spectroscopy, Plane Grating for.	J. S. Plaskett	58
" , System, Globular, Dynamics of.	A. S. Eddington	630
Sun, Contraction and Heat of.	A. Véronnet	1224
" , Electric Field of.	H. Deslandres	1386
" , Equatorial Acceleration of.	Fessenkoff	411
" , General Magnetic Field of.	G. E. Hale	34
" , " , " , H. Deslandres		195
" , Oxygen in.	C. Runge and F. Paschen	827
Sun's Axis of Rotation.	A. A. Buss.....	410
" , " , position of.	F. W. Dyson and E. W. Maunder.....	409
" , Magnetic Field, Displacement Curve of.	F. H. Seares	35
" , Magnetism; Notes upon Hale's Investigations.	K. Birkeland	615
" , Surface, Distribution of Prominences on.	A. Riccò.....	1668
Sun-spot Cycle, Harmonic Analysis of.	A. A. Michelson	193
" , " , Numbers, Wolf's, Harmonic Analysis of.	H. H. Turner ..	39
" , " , " , Wolf, 1901-12.	A. Wolfer.....	192
" , " , Periodicity as Fourier Series.	H. H. Turner	408
" , -spots and Meteor Swarms.	H. H. Turner	828
" , " , and Terrestrial Magnetism, Phenomena of.	C. Chree	349
" , " , Distribution of.	E. W. Maunder	1222
" , " , Radial Motion.	C. E. St. John	194
λ Tauri and φ Persei, Orbits of.	F. Schlesinger, F. C. Jordan, and A. H. Pfund	422
Wolf-Rayet D. M. + 30°3639°, Spectrum of.	P. W. Merrill	53
Zodiacal Light.	C. Abbe	1219
" , " , " , M. Hall		1220
" , " , Matter and Solar Constant.	E. Belot.....	417

Batteries, Primary.

Allotropy of Cadmium. E. Cohen and W. D. Helderman	1763
Concentration Cells of Solutions of Sodium in Ammonia, E.M.F. of C. A. Kraus.....	1935
Contact Difference of Potential of Distilled Metals. A. L. Hughes	1884
" -electricity between Gases and Conducting Fluids. A. Coehn and H. Mozer	1322

For the **Explanation** of this Index see p. 755.

Batteries (Primary), continued.

Contact E.M.F., Thermal Co-efficient of. H. C. Burbridge	540
" Potential in Vacuum. W. Schottky	1600
Copper Electrode, Potential of. G. N. Lewis and W. N. Lacey	1936
Drop-electrode Potentials in Mixtures of Water and Alcohol. H. Krumreich	364
Electric Double Layers on Metals in Vacuum. R. Seeliger.....	960
Electrolyte, Electrostatic Determination of Potential of. G. Borelius	1171
Electromotive Forces, Thermal Calculation of. J. N. Brönsted	1022
Flame Couples. G. Moreau	932
Grove Cell, New. K. Siegl	305
Hydrogen Electrode, and Contact Potential. C. N. Myers and S. F. Acree	1170
" " , New, and its Applicability. E. Wilke.....	1025
Membrane and Diffusion Potentials. E. B. R. Prideaux	2040
Polarisation, <i>see also</i> Section Polarisation (Electrolytic).	
Potential-drops at Boundary between Liquid and Gas. L. v. Putnoky	1023
" , Electric, across Semi-permeable Membrane. F. G. Donnan and G. M. Green	2039
Standard Cells, Mercurous Sulphate for.....	1640
Volta-effect. J. Guyot	1885
" " , Polarisation of, by Gaseous Discharges. E. Wertheimer	739
Weston Normal Cell. J. Pougnet, E. Segol, and J. Segol.....	745

Batteries, Secondary.

Accumulators, Industrial Electrical, <i>see</i> Section B.	
Lead Accumulator, E.M.F. of; Temperature and Acid Density. R. Thibaut.....	508B

Capacity (Electrostatic).

Measurements, <i>see</i> separate section.	
Spherical Electrodes, Two Unequal, Capacity Coefficients for. A. Guillet and M. Aubert	122
Wire Netting, Capacity of. P. O. Pedersen	151

Chemical Equilibrium. *see also* section Thermodynamics.

Electromotive Equilibria, Application of Theory of Allotropy to. A. Smits	1027
Electromotive Equilibria, Application of Theory of Allotropy to. A. Smits and A. H. W. Aten	1762
Equilibria between Metals, <i>see</i> sections Alloys and Metallography.	
Equilibrium-diagram of Water. G. Tammann.....	109
Flames, Hydrocarbon, Water-gas Equilibrium in. G. W. Andrew ...	1358
Ionisation, <i>see</i> section Dissociation.	
Phase Diagram of Eleven Substances with Reference to Melting Curve. P. W. Bridgman	1630

Conductivity (Electric) and Resistivity.

Bismuth and Antimony Alloys, Electric Peculiarities of. G. Gehlhoff and F. Neumeier	536
Conductance of Electrolytic Solutions. C. A. Kraus	1355
" of Hydriodic Acid at 25°. E. K. Strachan and V. G. Chu	1933
" of Ionised Substances in Various Solvents. C. A. Kraus and W. C. Bray.....	785
Conduction, Electric, in Metals. F. Skaupy	961
" , Electrical, at High Temperatures. E. F. Northrup.....	1882
" , Gaseous, Special Case of. N. Campbell	522
" , Metallic, Electron Theory of. W. F. G. Swann	1086
Conductivities, Electrical, of Alkali Metals. J. W. Hornbeck	332
" " , of Rarer Metals and Alloys. T. Barratt... ..	1991
Conductivity of Aqueous Salt Solutions; Influence of Temperature. H. Clausen	2035
" of Atmosphere, <i>see also</i> section Static Electricity.	

For the **Explanation** of this Index *see* p. 755.

Conductivity (Electric) and Resistivity, continued.

Conductivity of Fluosilicic Acid and Lead Fluosilicate. T. A. Patterson.....	1169
" of Salt Vapours. S. J. Kalandyk	1869
" of Thin Liquid Films. A. Ungerer.....	148
" , Electrical, in Non-aqueous Solutions. H. P. Cady and H. O. Lichtenwalter.....	786
" , Electrical, in Dilute Aqueous Solutions. S. Arrhenius	1011
" " , in Hydrocarbons, in Esters as Solvents. P. Walden	1010
" " , of Alloys of Copper and Tin. N. A. Puschin and A. V. Baskov	1724
" , Electrical, of Alloys of Copper and Zinc. N. A. Puschin and V. N. Rjashski	1754
" , Electrical, of Bromine Solutions of Iodine. W. A. Plotnikow and V. E. Rokotjan	1921
" , Electrical, of Copper between 20° and 373° absolute. W. Meissner	1082
" , Electrical, of Liquid Sulphur Dioxide. J. Carvallo.....	1725
" " , of Liquids in Magnetic and Electric Fields. T. Svedberg	537
" , Electrical, of some Fused Salts. P. Walden	1931
Electron Atmospheres, Distance between Conducting Plates and Question as to. F. C. Brown	147
Ionisation, <i>see</i> sections Dissociation and Ionisation, and Discharge, Electric.	
Measurements, <i>see</i> separate section.	
P.D. Necessary for Electric Current through Mercury at 4°19' K. H. K. Onnes	330
Powders, Compressed, of Sb, Bi, and Galena, Peculiarities of. G. Gehlhoff and F. Neumeier	1443
Resistance of Crystallised Antimony. W. J. de Haas.....	1597
" of Non-electrolytic Conductors, Positive and Negative Temperature Coefficient of. F. Streintz	1596
" of Tin, Sudden Disappearance of, and Super-conducting State of Lead. H. K. Onnes	1121
" of Wires, Alteration of, when subjected to Tension. F. Credner	1124
" , Electric, of Crystals, and Residual E.M.F.'s. P. Collet... ..	1598
" , Electrical, Change in, due to Orientation within Conductor. S. R. Williams	338
" , Electrical, of Iron-Carbon Alloys. R. Vondráček	1917
" " , of Mixtures of Xylol and Alcohol. N. Campbell	743
" " , of Pure Iron. G. K. Burgess and I. N. Kellberg	1883
" " , of Thin Layers of Platinum. B. Pogány	1727
" , Specific, of Iron. A. Portevin	1914
Resistivity of Copper at High Temperatures. E. F. Northrup.....	491B
" " " . Copper Wire Tables.....	832B
" of Molten Gold. E. F. Northrup	1123
" of Silver. E. F. Northrup	1728
Selenium, Action of Light on. W. S. Gripenberg	1599
" , Action of Mercury-vapour on. F. C. Brown	146
" , Behaviour of, towards Luminous Radiations. P. Pignataro	735
" , Efficiency of, as Detector of Light. E. E. Fournier d'Albe	209
" , Influence of Tellurium on Light-sensitiveness of. Abon-nenc	1880
" , Physical Properties of. P. J. Nicholson	1113
" , Properties of. G. W. White	1112
" " " . F. C. Brown	1879
" , Sensibility Curves for. F. C. Brown and L. P. Sieg... ..	1442, 1878
Silver Sulphide, Electrical Properties of. F. A. J. FitzGerald	1726
Steel, Tempered, Electric Properties of. U. Bordoni.....	156

For the **Explanation** of this Index *see* p. 755.

Conductivity (Electric) and Resistivity, continued.

- Supra-conductors, Appearance of Resistance in, when brought into
Magnetic Field. H. K. Onnes 1617

Conductivity (Thermal).

- Bi-Sb Alloys, Thermal Peculiarities of. S. Gehlhoff and F. Neumeier 536
Carbon and Graphite, Heat Resistivity of. J. W. Richards 897
Cooling of Spheres. F. Vercelli 1431
Copper, Thermal Conductivity of, between 20° and 373° abs. W.
Meissner 1082
Flow of Heat through Furnace Walls. I. Langmuir, E. Q. Adams,
G. S. Meikle 899
Fluids, Monatomic, Heat Conductivity of. L. Brillouin 1558
Granite and Basalt, Thermal Conductivity of, at High Temperatures.
H. H. Poole 689
Heat-flow, Some Aspects of. E. F. Northrup 898
Liquids, Thermal Conductivity of. E. Hernqvist 497
Measurements, *see* separate section.
Mercury, Thermal Conductivity of, by Impressed Velocity Method,
H. R. Nettleton 496
Metals and Alloys, Rarer, Thermal Conductivities of. T. Barratt ... 1991
Powders, Compressed, of Sb, Bi, and Galena, Peculiarities of. G.
Gehlhoff and F. Neumeier 1443

Critical Points and Constants.

- Critical Point and Significance of *b* in Equation of van der Waals.
T. W. Richards 1469
„ Point, Upper, of Mixing and Coexistence of Two Mixed
Crystal Phases. A. Smits and C. A. L. de Bruyn 1018
Hydrogen, Critical Data of. F. Bulle 275
Liquid, Critical Point of, Comparison of Point at which Solid State
disappears. J. D. van der Waals 998
Measurements, *see* separate section.
Mercury, Critical Temperature of. A. W. C. Menzies 277
Methane, Critical Constants of. E. Cardoso 278
New Relation between Critical Quantities. J. J. van Laar...1284, 1553, 2004

Dielectrics, *see also* section Capacity.

- Actino-dielectric Effect. F. Schmidt 1606
After-effect in Dielectrics. K. W. Wagner 1302
Air, Dielectric Constant of, up to 350 Atmospheres. A. Occhialini
and E. Bodareu 1129
Condenser, Plane, Conductivity of Ionised Gas in. G. Jaffé 740
Gases, Highly-compressed, Dielectric Constants of. A. Occhialini... 1316
Hydrogen, Dielectric Constant of, at High Pressure. A. Occhialini 538
Insulation Resistance, Characteristics of. S. Evershed 179B
Lag, Dielectric, Theory of. K. W. Wagner 514
Liquids, Influence of Conductivity on Dielectric Constants of.
W. M. Thornton 149
„ „ Specific Inductive Capacities of. C. Gutton 926
Measurements, *see* separate section.
Nitrogen, Dielectric Constant of, at High Pressure. E. Bodareu ... 539
Paraffin, Passage of Electricity through. G. G. de Villemontée...1444, 1445
Polarisation and Energy Loss in Dielectrics. A. W. Ashton 709
Solid Dielectric, Anomalous Conduction in. W. F. G. Swann 331
Tinfoil Contact with Dielectrics, Experiments on. G. E. Bairsto ... 150
Vapours, Dielectric Constants of. G. Pohrt 1122

Diffusion.

- Solids, Local Prevention of Case-hardening and Diffusion in. L.
Guillelt and V. Bernard 2029

Dilatation.

- Amalgams, Volume-changes of. J. Würschmidt 263
Ferro-Nickels, Dilatation of. P. Chevenard 1845
Mercury and Silica, Expansion of. F. J. Harlow 1081
Quartz, Fused, Absolute Expansion of. K. Scheel and W. Heuse ... 688
Water, Reversible Adiabatic Expansion of. J. R. Roebuck 273

For the **Explanation** of this Index *see* p. 755.

Discharge in Gases and in Vacuo (Electric), including Discharge of	
Condensers; <i>see also</i> section Rays.	
Absorption, Gas, <i>see also</i> section Absorption.	
Air, Combustion of, in Voltaic Arc. A. I. Gorbov and V. F. Mitkevitch.....	1452
A.C. Discharge with Small Current between Metal Electrodes. E. Merkel.....	1309
Arc and Spark Discharge. A. Szarvassi.....	944
„ Lamp, Evaporation Temperature of Carbon in. O. Lummer ...	107
„ „ Alternating-current, in Mercury-vapour. E. Darmois and M. Leblanc	589B
„ „ Electric, in Liquids. W. Hallström	319
„ „ Iron, Rotations in. W. G. Cady	142
„ „ Poulsen, in Liquids. T. Svedberg	743B
„ „ Singing, Sound Intensity of. H. Lichte	293
Becquerel-effect : Photoelectric Investigation. A. Goldmann and J. Brodsky	1712
Becquerel-effect : Photoelectric Theory of Action. A. Goldmann...	1713
Brush Discharge. A. Vosmaer.....	322
„ „ Phenomena produced by Continuous Potentials.	
„ S. P. Farwell	1718
„ Discharge, Electric, in Weak Acids and Solutions. H. Smith	1593
Canal Rays. E. Goldstein.....	2007
„ „ „ Analysis of. J. Stark	713
„ „ „ Excitation of Light by. W. Wien	1073
„ „ „ Secondary Radiation from, on Insulator. J. Koenigsberger and A. Gallus	1872
Condenser, Oscillatory Discharge of. V. Smirnoff and A. Fridmann	1104
Conduction of Electricity in Extreme Vacua. J. E. Lilienfeld	723
„ through Gases in Cylindrical Fields. V. Schaffers.....	727
„ „ „ Gaseous, Special Case of. N. Campbell.....	522
Conductivity Imparted to Liquid Air by α -Rays. J. C. McLennan and D. A. Keys	520
Conductivity of Salt Vapours. S. J. Kalandyk	1869
Corona produced by Continuous Potentials. S. P. Farwell	1166B
Damping of Oscillatory Discharges. F. L. Talamo.....	143
Discharge Tube, Absorption of Gases in. F. H. Newman	1717
Disintegration of Aluminium Kathode. L. L. Campbell	1874
Duddell Currents, <i>see</i> sections Alternate-Current Research and Oscillations.	
Electrification by Röntgen Rays. C. G. Bedreag	1580
Electrodeless Ring Discharge in Mercury Vapour. J. v. Kowalski...	1590
Emission of Ions by Non-radioactive Salts. D. Pacini	1868
Emissivity, Electric, of Matter. J. A. Harker	1111
Explosive Luminous Phenomenon in Rarefied Nitrogen. J. de Kowalski.....	730
Field-canal Rays. E. Wagner and J. Kutschewski	123
„ „ „ J. Stark	714
Flame Couples. G. Moreau	517, 932
Flames, Velocity of Positive Ions in. A. H. Saxer	1581
Geissler Tubes, Discharges in. M. Millochau	1592
Glow Discharge, Theory of. R. Holm	1591
Glowing Bodies, Energy of Electron Emission of. A. Wehnelt and E. Liebreich	135
„ „ Solids, Origin of Electron Emission from. F. Horton	1867
Heated Metals, Ionisation by. H. J. Proumen	934
„ „ „ Platinum, Positive Ionisation from. C. Sheard	1706
„ „ „ „ Conditions which Affect Ionisation from. C. Sheard and D. A. Woodbury	134
Heating Effects at Kathode in Vacuum Tubes. B. Hodgson and P. A. Mainstone.....	141

For the **Explanation** of this Index *see* p. 755.

Discharge in Gases and in Vacuo (Electric), including Discharge of	
Condensers, <i>continued</i> .	
Helix of Wehnelt Kathode Rays used to determine e/m and v . J. B. Nathanson	124
Hot Bodies, Absorption of Heat produced by Emission of Ions from. H. L. Cooke and O. W. Richardson.....	133
„ Bodies, Quantum Hypothesis and Electric Discharge from. W. Wilson.....	726
„ Kathodes, Cause of Emission of Electrons from. A. Gehrts ...	125
„ Metals, Positive Ions from. O. W. Richardson	935
„ Salts, Ions from. O. W. Richardson	132
Incandescent Filament and Coaxial Cylinder, Current between. W. Schottky	1588
„ Filament, Emission of Electrons from. W. Schottky	1589
Ion Clusters, Gaseous, Disintegration of, in Electric Field. R. D. Kleeman	1709
Ionisation by Collision and Electronic Affinity. J. Franck and G. Hertz	310
„ by Collision in Mercury Vapour. J. Franck and G. Hertz	1583
„ „ „ ; Lecture Experiment. F. J. Harlow.....	721
„ „ „ , Theory of. B. Davis	524
„ „ „ „ J. Franck and G. Hertz.....	715
„ „ Positive Ions. E[va] v. Bahr and J. Franck	933
„ of Gases by Collision. W. I. Pawlow	1710
„ „ „ „ with Low Electric Forces. F. W. Wheatley	716
„ produced by Substances when heated on Nernst Filament. F. Horton	1708
„ Theory, Columnar. G. Jaffé	321
„ , Residual, in Gases. J. L. McLennan.....	519
„ , Thermal, from Carbon, Origin of. J. N. Pring	523
„ „ „ „ O. W. Richardson... ..	1304
Ionomagnetic Rotations, Theory of. A. Righi.....	131, 1870
Ions of Flames, Variations in Velocity of, with Field. A. Bernini ...	518
„ , Gaseous, Instability of. R. D. Kleeman	311
„ „ „ , Recombination of. G. Rümelin	1098
Kathode Disintegration in Vacuum Tube. A. M. Tyndall and H. G. Hughes	1101
„ Particles, Passage of, through Gases at Low Pressures. L. W. McKeehan	1714
„ Rays in Hydrogen, Production of Light by. J. Holtsmark	1586
„ „ , Absorption of, by Metallic Sheets. R. Whiddington.	313
„ „ , Ionisation produced by. J. L. Glasson	948
„ „ , Transmission of, through Matter. R. Whiddington.	1307
Light, Influence of, upon Spark. Regulating Sparks. M. Bonch-Bruевич	1439
Lightning Rods, Protective Range of. J. Larmor and J. S. B. Larmor	1705
Limiting Potentials with Cylindrical Electrodes. W. Schottky	1587
Line Spectrum from Uncharged Molecules. C. D. Child.....	320
Low-potential Discharges in High Vacua. J. S. Townsend	532
„ „ „ „ F. Horton	533
Magnetic Field, Discharge in. R. F. Earhart	1099
„ Rays in Gases and Gas Mixtures. A. Righi	1582
Mercury Lamps, Quartz, Absorption of Light inside. F. P. Kerschbaum	938
„ Line $\lambda 2536$, Excitation of, by Electron Collisions. J. Franck and G. Hertz	1584
Monomolecular Ions in Gases. W. Altberg	126
Neon or Helium, Attempts to observe Production of, by Discharge. R. J. Strutt	1102

For the **Explanation** of this Index see p. 755.

Discharge in Gases and in Vacuo (Electric), including Discharge of
Condensers, *continued*.

Neon Tubes, Influence of Diameter upon P.D. at Terminals of. G. Claude	940
Nitrogen and Oxygen, Oxidation of. W. W. Strong	351
" , Oxidation of, in Voltaic Arc. A. V. Schaposchnikow, A. R. J. Strutt, A. Koenig, E. Elöd.....	979
Gudima, and V. Kutovski	1453
Ozone, Yield of ; Influence of Current, Frequency and Temperature. N. Puschin and M. Kauchtshev	1922
Phenomena in Rarefied Gas. B. Baule	1308
Photoelectric and Photo-chemical Action. O. W. Richardson	1305
" Cells, Potential Attained by, in Darkness. J. W. Woodrow	525
" Currents and Light Intensity, Relation between. J. Elster and H. Geitel.....	128
" Currents in Gases. A. Partzsch	1575
" Effect. K. T. Compton and O. W. Richardson	314
" " . L. Page.....	318
" " . A. Hallermann	718
" " with Platinum Layers. S. Werner	315
" " , Influence of Discharge on. H. Greinacher ...	130
" " , Normal. Long-wave Limits of. R. Pohl and P. Pringsheim	719
" Effect, Normal. Long-wave Limits of. A. L. Hughes	1100
" " of Carbon as Influenced by Absorbed Gases. O. Stuhlmann and R. Piersol	1574
" Effect of Metallic Compounds. G. A. Dima	316
" " of Metals, Dependence of, on surrounding Gas. G. Paech.....	720
" Effect of Potassium and Thermic Emission of Electrons. K. Fredenhagen	939
" Effect, Selective Action of Metals in. G. Reboul	936
" " , Selective, Influence of Occluded Gases on. R. Pohl and P. Pringsheim	1306
" Effect, Failure of, with freshly scraped Metal Surfaces when Gas capable of Reacting is Excluded. K. Fredenhagen and H. Küstner.....	717
" Effect, Theory of. L. Kordysch	312
" Emission of Electrons. R. Pohl and P. Pringsheim...	945
" Phenomenon presented by Liquid Dielectrics. L. Stramp	1711
" Phenomenon, New : Conductivity of Liquid SO ₂ . J. Carvallo	1725
" Photometry. J. Elster and H. Geitel	1871
" Properties of Liquids. M. La Rosa and V. Cavallaro...	129
" " of Thin Kathode Films. O. Stuhlmann, Jr., and K. T. Compton	127, 317
Photo-electricity of Potassium, Strong, Cause of. G. Wiedman and W. Hallwachs	722
" -electrons, from Sodium and Potassium, Energy of. W. H. Kadesch	1576
" -electrons, Velocities of. G. A. Dima	1585
Point Discharge in Magnetic and Electrostatic Fields. O. W. Silvey	138
Points and Cylinders, Discharge from. J. S. Townsend and P. J. Edmunds	1595
" , Discharge of Electricity from. P. J. Edmunds.....	1876
" , Influence of Ultra-violet Light on Discharge from. W. Gerlach and E. Meyer.....	139
" , Liquid, Discharge from. J. Zeleny	1103

For the **Explanation** of this Index see p. 755.

- Discharge in Gases and in Vacuo** (Electric), including Discharge of
Condensers, continued.
- Positive Glow Discharge in Hydrogen, Striation of. P. Neubert ... 941
 Potential to maintain Current between Coaxial Cylinders. J. S. Townsend 1875
 Pressure Gradient produced in Gaseous Discharge by Transverse Field. H. Sirk 140
 Rare Gases, Attempts to produce, by Electric Discharge. T. R. Merton..... 1715
 " Gases, Production of, by Electric Discharges. J. N. Collie ... 1716
 Ring Discharge without Electrodes. R. Wachsmuth and B. Winawer..... 136
 Röntgen Tube, Powerful, with Pure Electron Discharge. J. E. Lilienfeld 1578
 Short Spark-gaps between Metals. E. Taege 729
 Silica Bulbs, Rotating, Electric Discharge Phenomena in. R. J. Strutt 531
 Spark Discharge and Arc, Distinction between. A. Occhialini 1877
 " Potentials, Effect of Longitudinal Field on. R. F. Earhart ... 1719
 Spatial Density of Electrons, Experiment Illustrating. F. L. Hopwood 1579
 Striations in Pure Gases, and Influence of Impurities. P. Neubert 1310
 Thermionic Currents in High Vacuum; Effect of Residual Gases.
 I. Langmuir 725
 " Currents in High Vacuum; Effect of Residual Gases.
 J. E. Lilienfeld 1577
 Tubes for Magnetic Rays, Virtual Anode in. A. Righi 529
 Unidirectional Currents within Carbon Filament Lamp. A. S. Eve and F. L. Hopwood 942
 Unstriated Discharge and Arc, Ionisation in. C. D. Child 943
 Vacuum Tubes, Continued Appearance of Gases in. G. Winchester. 1312
 " " Heating Effects at Anode in. B. Hodgson..... 728
 " " Occluded Gases in. R. W. Lawson 530
 Volume Charge due to Positive Ions. W. Schottky 1866
 Wehnelt Electrode, Behaviour of, in Different Gases. K. Fredenhagen 724
 " Kathode, Action of. F. Horton 1873
 " " Sealing Wax as a Source of Lime for. N[ellie] N. Hornor 521
 Wind, Electric, from Discharging Point; Effect of Pressure. J. R. Boon 137
- Dispersion** (Light).
 Aberration in Dispersive Medium and Airy's Experiment. J. Walker. 1048
 Crystals, Diatomic, Infra-red Dispersion of. W. Dehlinger..... 1509
 Gases, Dispersion of Light in, in Ultra-violet Region. J. Koch... 232, 233
 Irrationality of Dispersion; Lecture Experiment. S. P. Thompson 1517
 Nitrogen Peroxide, Gaseous, Dispersion of. C. Cuthbertson and M. Cuthbertson 61
 Prism, Dispersion of Light Pulse by. R. A. Houstoun 1519
 Selenium, Dispersion by. K. Foersterling and V. Fréedericksz 1406
 Ultra-violet Rays, Dispersion of, in Aqueous Saline Solutions. C. Lübben 1966, 1967
- Dissociation and Ionisation.**
 Cryoscopic Measurements, *see* section Freezing-, Melting-, and Boiling-Points.
 Dissociation of Gases, Theory of. O. Stern 1638
 " of Hydrogen into Atoms. I. Langmuir and G. M. J. Mackay 1932
 " Electrolytic, Theory of. S. Arrhenius..... 1639
 Flame Couples. G. Moreau 711
 Ionisation of the Atmosphere, *see* section Static Electricity.
 Ionometry, Differential, and the Theory of Arrhenius. E. Fouard 576
 Recombination of Ions made by α -Rays. H. Ogden 712
- For the **Explanation** of this Index *see* p. 755.

Dynamics and General Mechanics.

Action of Vibrating Air on Two Spheres. G. Thomas	388
Aeroplane, Development of. R. T. Glazebrook	910B
Air-flow in Wide Tubes. K. W. F. Kohlrausch	1186
„ Friction, Comparative, on Different Surfaces. Maurain and de Moismont	152B
Bodies moving in Liquid, Action between. E. Almansi	1789
Canonical Relations in General Dynamics. A. Gray	595
Cavitation, Criterion for Occurrence of. L. Gumbel	188
Centrifugal Apparatus, Rotational Phenomena of. K. Uller	1184
Distribution of Pressure round Bodies exposed to Air Currents. A. P. Thurston	1947
Drops of Liquid Moving in Liquid: Stokes' Law. I. Nordlund	180
Efflux from a Vessel Perforated in the Base. U. Cisotti	600
Flow of Air through Capillary Tubes. I. M. Rapp	387
„ „ Gases and Vapours from Nozzles. H. Parenty	1786
„ „ Liquids. P. Alibrandi	1788
„ „ Viscous Fluids through Orifices. G. F. Davidson	11
„ „ „ Fluid, Decrement of Vibrations in. L. Hopf	1189
„ „ Water and Mercury, Turbulent, through Tubes. G. Lechner	183
„ „ Uniform, in Square Tube. M. Paschoud	1658
Fluid Jets, Constitution of. H. Parenty	1941
„ Motion, Phenomena of. W. S. Franklin	599
„ Motions. Rayleigh	1201
Gravitation Theory, Einstein's. G. Mie	809
„ „ „ Nordström's. A. Einstein and A. D. Fokker	1193
Hydrodynamic Experiment. D. Riabouchinsky	1659
Inertia of Energy. P. Langevin	13
Mechanical Bases. H. M. Dadourian	808
Minkowski's Mechanics. B. Weinstein	1204
Molecular Currents and Temperature Discontinuity. H. Bolza, M. Born, and T. v. Kármán	17
Motion of Bodies through Air and Water. J. B. Henderson	603
„ of Inviscid Fluid, Stability of. Rayleigh	386
„ of Long Air-bubbles in Vertical Tube. A. H. Gibson	601
„ of Viscous Fluid. Rayleigh	10
New Mechanics. L. T. More	1205
„ Paths of Physical Knowledge. M. Planck	1795
Oscillations of Tank-water, Investigation of. K. Honda and T. Matsushita	1803
Outflow of Explosive Gases. C. Cranz and B. Glatzel	1190
Pendulum of Constant Length and Variable Rate. L. Labocetta	1770
Point-systems, Elastically-coupled, Dynamics of. E. Schrödinger	1485
Projectile Velocity, Increase in, in Front of Muzzle. M. Ōkōchi	5
Quantum Theory, Possible Meaning of. N. Umow	1192
Relativity. R. A. Wetzel	8
Relativity Dynamics of Homogeneous Bodies. K. Schaposchnikow, M. v. Laue	390
„ „ of Accelerations in Mechanics. H. Reissner	1203
„ „ Principle. R. Hiecke	1483
„ „ „ and Accelerated Motion. F. Kottler	1484
„ „ „ and Intra-atomic Energy. G. Le Bon	1482
„ „ „ Interpretation of. C. Munari	1791
„ „ Theory. S. Mohorovičić	593
„ „ „ J. Ishiwara	1792
Resistance of Struts, and Wires in Current of Air. A. P. Thurston	908B
„ „ of Fluid to Translation of Spindle-shaped Body. Fournier	1946
Revolving Liquid, Equilibrium of, under Capillary Force. Rayleigh	1663
Rigid Body, Born's, Kinematics of. E. Föppl, P. Daniell	813
Ship Resistance: Wave-making Properties of Disturbances. T. H. Havelock	814
Similitude, Principle of. R. C. Tolman	1195

For the **Explanation** of this Index see p. 755.

Dynamics and General Mechanics, continued.

Stationary and Moving Systems. K. Tamaki	9
Stokes' Resistance Formula, Region in which it is Valid. C. W. Oseen	184
"Suction" between Passing Ships. S. A. Reeve.....	1662
" between Passing Vessels. A. H. Gibson and J. H. Thompson	187
Turbulence Viscosity of Water. W. Sorkau.....	12
Vortex Motion in Perfect Fluid. A. Gray.....	1787
Waves and Bores, Long, Theory of. Rayleigh	1486
" , Deep Water. J. R. Wilton	815
" , Progressive, Momentum of. Rayleigh.....	1207

Elasticity, see also section Metallography.

Beams and Crane Hooks, Rupture Stresses in. A. R. Fulton	1782
Columns, Ideal Long, Critical Loads for. A. Morley.....	1200
Compressibilities of Solutions of Inorganic Salts. W. Watson	1925
Compressibility of Ice. T. W. Richards and C. L. Speyers	1029
Copper Wire, Change in Elasticity of, with Current. H. L. Dodge	376
Deformation, Plastic, of Steel during Overstrain. H. M. Howe and A. G. Levy	1370
Detonation of Gun-Cotton, Effects of. B. Hopkinson	380
" of High Explosives, Measuring Pressure produced in. B. Hopkinson.....	379
Glass, Strained, Photo-elastic Effect in. L. N. G. Filon.....	1375
" , Variation of Internal Friction of. C. E. Guye and [Mlle] S. Vassileff	1185
Heat of Fusion of Metals and Elasticity: Supposed Relation. F. Lejeune	381
Hysteresis, Elastic, in Steel. F. E. Rowett	1026
" , " , Thermo-electric Measurement of. K. Baedeker and W. Vehrighs.....	1729
Modulus of Elasticity of Metals, Temperature change of. F. C. Lea and O. H. Crowther.....	1942
Overstrain, Simple, study of. H. M. Howe	2028
Rock-salt Crystals, Deformation of. T. Terada	1654
" , Plastic, Properties of. K. Kleinhanns	1028
Rubber, Elasticity of, at Small Pressures. L. Bouchet	1377
" , Vulcanised, Poisson's Ratio for. L. Bouchet.....	1778
Stability, Elastic, General Theory of. R. V. Southwell	382
Stress Measurements on Board Ships. Siemann	1476
" , Specification of Elements of. R. F. Gwyther	1661
Stresses in Plate near Plugged Hole. K. Suyehiro.....	1777
Struts with Lateral and Non-axial Loads: Graphical Methods. C. H. Lander.....	384
" , Long, of Varying Section, Critical Loads for. L. Bairstow and E. W. Stedman	1781
" , Three, Experiments on. M. Rudeloff.....	1374
Tensile Tests, Determination of True Stresses during. F. Hauser... ..	378
Tension Elasticity of Copper. G. Colonnetti	1369
Thermo-elasticity, Equations of, from Principle of Least Action. A. S. de Doba.....	1379
Torsional Oscillations in Nickel-wires in Alternating Fields. W. Brown and J. Smith	1027
Tubes of Lead, Cylindrical, Crushing Tests on. A. Kirsch	1199
" , Collapse of, by External Pressure. R. V. Southwell	1651
" , Short, Collapse of, by External Pressure. G. Cook.....	1652
" , Thin, Critical External Pressure on. K. v. Mises	1376
" , Thin Oval, under Uniform Pressure. R. Mayer-Mita.....	1183
Wires, Longitudinal Vibration of. G. A. Lindsay	1475

Electric Furnace Processes.

Borides, Synthesis of, in Electric Vacuum Furnace. E. Wedekind	2018
Electrodes, Furnace. F. A. J. FitzGerald and A. T. Hinckley.....	40B

For the **Explanation** of this Index see p. 755.

Electric Furnace Processes, continued.

- Flow of Heat through Furnace Walls. I. Langmuir, E. Q. Adams, and G. S. Meikle 899
- Fractionation of Alloys in Electric Micro-furnace. A. L. Fletcher... 573
- Heat-Losses in Furnaces. F. A. J. FitzGerald 509B
- Industrial Processes, *see* Section B.
- Melting-points, *see* separate section.
- Oxides, Refractory, Fusion of, in Electric Vacuum Furnace. O. Ruff, H. Seiferheld, and J. Suda..... 1160
- Refractory Oxides in Electric Vacuum Furnace. O. Ruff, H. Seiferheld, and J. Suda 2017

Electrolysis.

- Aluminium, Electrometallurgy of. P. P. Fedotieff and W. Iljinsky... 2041
- Analysis, Separation, and Estimation (Electrolytic), *see* section Electrolytic Analysis.
- Brass, Deposition of, on Rotating Kathode. C. W. Bennett and A. W. Davison 1766
- Cadmium, Electro-deposition of. F. C. Mathers and H. M. Marble 1767
- Carbon Dioxide, Electrolytic Reduction of, under Pressure. F. Fischer and O. Prziza 1173
- Cataphoresis of Colloidal Solutions, Ultramicroscopic Investigations of. M. Kimura 368
- Chemical Action Stimulated by Alternating Currents. S. G. Brown 1641
- " and Electrolytic Processes, Connection between. D. Reichinstein 1360
- Copper, Rapid Refining of, with Rotating Kathode. C. W. Bennett and C. O. Brown 585
- Cyanide Solutions, Electrolysis of. E. F. Kern 793
- Cyanides, Simple Alkaline, Electrolysis of Solutions of. G. H. Clevenger and M. L. Hall 792
- Electrostenolysis. H. N. Holmes..... 1937
- Industrial Electrolysis, Plating and Refining, *see* section B.
- Iron, Effect of Addition Agents in deposition of. O. P. Watts and M. H. Li 1768
- Lead, Solid deposits of, from Lead Acetate Solutions. F. C. Mathers 794
- Light, Effect of, on Decomposition Voltage. A. Leighton 583
- Nickel, Electro-deposition of. C. W. Bennett, H. C. Kenny, and R. P. Dugliss..... 1362
- " -plating of Aluminium. E. Tassilly..... 1764
- Nickeling of Aluminium. J. Canac and E. Tassilly..... 790
- Passivity of Metals. G. Senter, G. Grube, G. Reichinstein, H. S. Allen, M. Le Blanc, G. C. Schmidt, G. Schulze, A. P. Schoch..... 1646
- Polarisation Capacity of Electrode under Alternating E.M.F. P. Vaillant 789
- " (Electrolytic), *see also* separate section.
- Polonium, Extraction of. F. Paneth and G. v. Hevesy 581
- Potassium Chloride, Electrolysis of. H. S. Lukens..... 369
- Potassium *o*-Nitrobenzoate in *o*-Nitrobenzoic Acid, Electrolysis of. J. C. Schall 1361
- RaB and ThB, Electrochemical Properties of. Z. Klemensiewicz ... 1644
- Radio-active Elements, Interchangeability of. F. Paneth and G. v. Hevesy..... 582
- Rectifier, Aluminium, Polarisation in. C. W. Greene..... 1643
- " , Electrolytic, *see also* section Polarisation (Electrolytic).
- Rectifiers, Electrolytic. G. Schulze and R. Lindemann 1642
- " , Metallic. W. Winter 154
- Rusting of Iron in Water. W. A. Bradbury..... 999
- Single Potentials, Polarisation. C. N. Hitchcock 1765
- Sodium Hypochlorite, Electrolytic, with Cooled Anode. P. H. Prausnitz..... 366
- " , Preparation of. B. Neumann and S. Giertsen..... 1752
- For the **Explanation** of this Index *see* p. 755.

Electrolysis, continued.

Valve Cells (Electrolytic), Deposition of Metal in.	G. Schulze	1645
Voltameter, Silver.	E. B. Rosa, G. W. Vinal, and A. S. McDaniel.....	153, 744
" " " "	W. Jaeger and H. v. Steinwehr	1609
Voltameters, Silver and Iodine.	S. J. Bates and G. W. Vinal	1608
Zinc, Electro-deposition of, at High-current Densities.	J. N. Pring and M. C. Tainton	1172
" " Electrolytic Deposition of.	J. W. Richards	1769
Zirconium Anodes, Valve Action of.	L. H. Walter	367

Electrolytic Analysis.

Brass Gauze as Substitute for Platinum in Electro-analysis.	D. F. Calhane and T. C. Wheaton	791
Copper and Lead, Simultaneous Determination of.	A. J. White.....	795
Iron, Electrolytic Reduction of, for Analysis.	J. C. Horstetter	584
Zinc, Rapid Determination of, in Minerals.	S. Zublena	1174

Electromagnetic Theory.

Accelerated Conductors.	R. C. Tolman, E. W. Osgerby, and T. D. Stewart	1089
Charge, Elementary Electric, and Avogadro's Constant.	R. A. Millikan	116
Conduction, Electric, in Metals.	F. Skaupy.....	1570
Electric Charges less than that on Electron.	F. Ehrenhaft.....	1300, 1571
Electrodynamics, Minkowski's, Fundamental Equations of.	L. Waelsch	118, 512
Electrodynamics of Moving Media, and the Principle of Relativity.	H. R. Hassé	707
Electromagnetic and Gravitational Fields, Possible Union of.	G. Nordström	1437
Electromagnetic Field of Force.	T. Gross	1088
" " Fields, Classification of.	H. Bateman.....	708
Electron Theory, Statistical.	J. Kroo.....	511
Electrons, Diffusion of, through a Slit.	J. H. Mackie.....	1299
" " Free, in Metals.	W. H. Keesom	305
" " " " " " " "	K. F. Herzfeld	923
" " " " " " " "	T. Otashiro	114
" " Moving, Mass of.	C. Schaefer and G. Neumann	922
" " Nuclear.	A. van den Broek	1090
" " Pulsating, and Quanta.	A. Korn	924
" " Series, Speed of.	J. Stark	1522
Electronic Charge by Thermodynamical Method.	F. Wächter	1298
" " Motion, Kinetic Theories of.	H. A. Lorentz	704
c/m for Canal Rays in Hydrogen, Determination of.	W. Hammer... ..	1301
" " Kathode Rays, Measurement of.	L. T. Jones	1436
" " Method for, from Thermionic Currents.	S. Dushman	1699
" " and v , Helix of Wehnelt Kathode Rays used to Determine.	J. B. Nathanson	124
Evaporation of Mercury Droplets suspended in Gas.	A. Schidlof and A. Karpowicz	1569
Faraday-effect, Theory of.	P. Selényi	1568
Flux of Electrical Energy.	M. Siegbahn	306
Induction, Electromagnetic.	S. J. Barnett	115
" " Unipolar, and Dielectric.	K. Fehrlé	510
Light, Electromagnetic Emission Theory of.	J. Kunz	1507
Lorentz Transformation in Electrodynamics, Questions Relative to.	R. Marcolongo	1092
Moving Bodies, Electron Theory of.	J. Ishiwara	2005
" " " " " " " "	J. Ishiwara.....	1572
" " Media.	E. Lohr	513
Ponderomotive Force on Dielectric carrying Displacement Current.	R. H. Goddard	1860
Potential Theory.	J. G. Leatham	1709

For the **Explanation** of this Index see p. 755.

Electromagnetic Theory, continued.

Quantities of Electricity Smaller than Electronic Charge. F. Ehrenhaft	509
Quantum Theory and Rational Units. G. K. Lewis and E. Q. Adams	1091
Radiation, Corpuscular. H. Bateman	925
Rotating Electric Molecule in Radiation Field, Mean Energy of. A. D. Fokker	1087
Scattering of α -Rays, Effect of Magnetron in. W. M. Hicks.....	1861

Electro-Physiology and Radiography.

Burns by Röntgen Rays, Means of Avoiding. M. Ménard	169
Cancer and Secondary Rays from Calcium Phosphate. R. A. Fessenden	565
Coefficient of Protection of Substances containing Caoutchouc. B. Walter.....	1343
Dose-meters in Actual Use, Criticism of. Grossmann	1341
Elimination of Secondary Radiations produced in Radiographed Object. G. Bucky	974
Localisation of Foreign Bodies by X-Rays, New Methods of. G. Réchou	1150
" of Foreign Bodies, Three Practical Methods of. Mazères	1151
Quantimeters and Scales of Hardness, Comparison of.....	976
Radio Dose-meters, Comparison of. Lévy-Dorn.....	1342
" " " Valuation of Modifications of Colour of. G. Bucky	975
Radiography, Replacing Photographic Plates by Gelatino-bromide Papers in. C. H. Vaillant	1082
Radium, Local Application of, in Therapeutics. J. Joly	1344
Röntgen Rays and Spark Inductors. C. Déguisne.....	1744
" " " and γ -Rays, Absolute Measure of. B. Szilard	1622
" " " Measurements of. W. E. Schall.....	1743
" -ray Tube, Coolidge, Applications of. W. P. Davey	1742
" " " " powerful, with Pure Electron Discharge. W. D. Coolidge.....	564
Time of Exposure of Radiograph, Determination of. T. Nogier.....	168
Visual Sensation caused by Magnetic Field. C. E. Magnusson and H. C. Stevens.....	1906

Freezing-, Melting-, and Boiling-Points.

Boiling-point of Sulphur on Thermodynamic Scale. N. Eumorphopoulos.....	1277
Evaporation Temperature of Carbon in Arc Lamp. O. Lummer ...	107
Melting-point of Arsenic. R. Goubau	896
" " of Molybdenum. C. E. Mendenhall and W. E. Forsythe.....	112
" " points of Refractory Elements of Atomic Weight from 48 to 59. G. K. Burgess and R. G. Waltenberg.....	1995
" " points of some Refractory Oxides. C. W. Kanolt	1992
" Range of Temperatures of Lava. K. Fuji and T. Mizoguchi...	1276

Gases and Vapours.

Air, Cooling Method of Drying, for Liquefaction. G. Claude	276
Argon, Solid, New Determination of Vapour Pressures of. C. A. Crommelin.....	2001
" " Vapour Pressure of, from Critical Point down to -206° . C. A. Crommelin.....	272
Carbon Dioxide, Vapour Pressure of, between -160° C. and -183° C. H. K. Onnes and S. Weber.....	270
" " Dioxide, Vapour Pressure of, from -140° to about 160° . S. Weber	271
CO ₂ , Liquid, Inversion Point for. A. W. Porter	703
Combustion of Gaseous Mixtures. Taffanel and Le Floch.....	280
" " " " and Velocities of Reaction. Taffanel	281

For the **Explanation** of this Index see p. 755.

Inductance (Self and Mutual), <i>continued</i> .	
Self-inductance Ribbon of Wire wound on Cylinder. N. Bulgakov...	237B
Two Circular Currents, Induction of. E. Mathy	741
Interference.	
Debye-effect. E. Schrödinger	1423
Diffraction by Particles Comparable with the Wave-length. B. A. Keen and A. W. Porter	645
" by Spheres of Small Relative Index. Rayleigh	1238
" Phenomena, Fresnel's. W. Arkadiew	64
" , Dynamical Theory of. D. N. Mallik.....	1673
Doppler Principle and Relativity. K. Tamaki	68
Doppler's Principle for Light. C. Fabry and H. Buisson	1405
Ether Wind, Relative, Interferometer in Rotation demonstrates. G. Sagnac	65
" , Circulation of, in Rotating Interferometer. G. Sagnac	1506
" , Existence of. Sagnac-effect. H. Witte.....	847
" , Reality of. G. Sagnac	216
Grating Line, Interference Images of. J. Kern	1049
" , Plane. F. Biske	1045
" , Theory of. W. v. Ignatowsky	1518
Gratings, Concave Diffraction. G. Guglilemo	1514
Interference Experiments in Rarefied Gas. F. P. Kerschbaum	1047
Michelson-Morley Experiment. J. Rose Innes.....	644
Scattering of Light. T. Brillouin.....	1414
Tyndall Phenomenon. E. Wilkie and H. Handovsky.....	437
" " in Gelatine Solutions. L. Arisz.....	434
Magnetism.	
Alkaline Metals in Combination, Magnetic Properties of. P. Pascal	559
Apparatus and Instruments, <i>see also</i> separate section.	
Alloys, Binary, Susceptibility of. K. Honda and T. Soné	1895
" , Feebly Magnetic, Susceptibility of. E. L. Dupuy	1137
" , Fe-Co, Polymorphic Transformation in. R. Ruer and K. Kaneko	755
" , Preparation of, for Magnetic Research. J. de Freudenreich	1891
Alternating Magnetisation at High Frequencies. C. E. Guye and [Mlle.] A. Albert	550
Bismuth Amalgams, Magnetic Constants of. T. Gnesotto and M. Binghinotto.....	757
Change in Electrical Resistance due to Orientation within Conductor. S. R. Williams.....	338
" of Magnetisation of Iron and Nickel at High Temperatures. K. Honda and Y. Ogura	1133
Chrome Steels, Magnetic Properties of Series of. M. B. Moir.....	1447
Compensated Electromagnet as Standard of Field Strength. R. Beattie	1893
Cross Magnetisation made Visible. E. Liebreich.....	1134
Crystals, Magnetism of, and Energy at Absolute Zero. G. Foex	345
Curie's Law and Energy at Absolute Zero. E. Oosterhuis.....	346
Decomposition of Complex Chemical Compounds in varying Magnetic Fields. G. W. Heimrod.....	980
Demagnetising Factors of Cylindrical Rods in High Fields. B. O. Peirce	1446
Diamagnetic Properties of Elements follow Periodic Law. P. Pascal	1618
" Substances, Molecular Field in. A. E. Oxley	1739
Diamagnetism, Rôle of Valency in Additivity of. P. Pascal	1901
Electrolytic Iron Melted in <i>Vacuo</i> , Properties of. T. D. Yensen.....	1616
Electromagnetic Fields in Ferromagnetic Metals. W. Arkadief.....	558
" Theory, <i>see</i> separate section.	
Electronic Theory of Magnetism, Statistic. E. Holm	1336
Ferromagnetic Metals, Theory of Electromagnetic Field in. W. Arkadief	1338

Magnetism, continued.

Ferromagnetic Property as a Function of Wave-length.		W.		
Arkadief		753		
Ferro-magnetism, Variation of, with Temperature.	P. Dejean	758		
Foucault Currents in Iron Anchor-ring.	A. Defretin	1614		
Hall-effect in Flames.	H. A. Wilson	1448		
"	Liquid and Solid Mercury.	W. N. Fenninger..... 759		
"	Effects related to.	E. P. Adams	971	
Heusler Alloys, Change in Resistance of, when in Transverse Field.				
O. Bonazzi		1329		
"	Alloys, Induction in, at High Frequencies.	H. Fassbender	1738	
"	: Relation of Specific Heats to their Magnetic Properties.			
ties.	E. Dippel		553	
Hysteresis at High Frequencies.	A. Schidlof and [Mlle.] A. Albert		1145	
Intense Magnetic Field.	H. Deslandres and A. Perot.....	752,	2010	
Iron Compounds, Magneto-Chemistry of.	B. Cabrera and E. Moles		561	
"	Sesquioxide, Magnetic Study of.	R. Wallach.....	1900	
"	Shielded from Earth's Magnetism.	E. Wilson	1330, 1736	
Kerr-effect in Ferromagnetic Compounds.	P. Martin		342	
Liquids, Absolute Susceptibility of.	W. J. de Haas and P. Drapier...		1148	
Magnetic Effects in Iron, Nickel, and Cobalt at High Temperatures.				
K. Honda			1892	
"	Field of Two Electromagnets in Rotation.	S. J. Barnett	555	
"	Rotation, Optical, <i>see</i> section Polarisation.			
"	Transformation and its Nomenclature.	K. Honda	1894	
Magnetisation of Iron at Low Inductions.	L. W. Wild		552	
Magnetite, Change of Length in, with Magnetisation.	K. Yamada		166	
Magneto-chemical Phenomena.	A. Ščukarev		1741	
Magneton and Planck's Constant.	S. B. McLaren		341	
"	Stere-Numbers of Magnetic Kathions.	A. Heydweiller	348	
Magnets, Extension of Thomson's Theory for Constitution of.	J. B. Pomey		970	
"	Permanent, and Dynamical Theory.	A. Gray	1132	
Manganese and Chromium, Magnetisation of.	W. Lepke		1335	
"	Phosphides, Ferromagnetic.	S. Hilpert and T. Dieckmann	1139	
Mayer's Experiment with Floating Magnets, Extension of.	E. R. Lyon.....		1144	
Measurements, <i>see</i> separate section.				
Molecular Field and Law of Action at Distance.	P. Weiss		557	
"	"	Maurain's Magnetising Action.	P. Weiss	756
Nickel and Iron, Magnetic Properties of.	J. R. Ashworth		1135	
"	Compounds, Magneto-chemistry of.	B. Cabrera, E. Moles, and J. Guzman	1339	
"	Change of Length of, in Alternating Fields.	W. Brown.....	1332	
"	Coercive Force of.	R. Gans	161	
"	Magnetisation of; Effect of Changes of Resistance.	C. G. Knott	162	
"	Resistance of, in Magnetic Fields.	W. M. Jones and J. E. Malam	1331	
Nitric Oxide, Coefficient of Magnetisation of.	P. Weiss and A. Piccard.....		562	
Nitrogen and Oxygen, Susceptibility of Liquid Mixtures of.	A. Perrier and H. K. Onnes.....		1142	
Oxygen, Solid, Susceptibility of, in two Forms.	A. Perrier and H. K. Onnes		1141	
Paramagnetic Substances, Susceptibility of.	W. H. Keesom		1899	
Paramagnetism at Low Temperatures.	H. K. Onnes and E. Oosterhuis		163	
Permeability at Low Induction Densities.	A. F. Wagner.....		1613	

For the **Explanation** of this Index see p. 755.

For the **Explanation** of this Index *see* p. 755.

Magnetism, continued.

Permeability, Initial, of Iron and Magnetite. P. Weiss and K. Renger	1735
" , Small, Cryomagnetic Investigation of Substances of. H. K. Onnes and A. Perrier	969
Rapidly-oscillating Fields, Magnetisation in. H. Rohmann	1737
Resistance, Metallic, Effect of Magnetic Field on. W. A. Jenkins ...	1615
Salts and Sands, Magnetic Susceptibility of. H. Takagi	1898
" , Paramagnetic, Magnetic Susceptibility of, in Solution. A. Heydweiller	560
Sensitive State; Effect of Thermal Treatment and of Longitudinal Strain. M. B. Moir	160
Skin-effect, Magnetic. H. Fassbender and E. Hupka	396B
Solutions, Magnetic Susceptibility of. A. Quartaroli	1740
Spontaneous Magnetisation and Assumption of Zero-point Energy. W. H. Keesom	343
Supra-conductors, Appearance of, Resistance in, when brought into Magnetic Field. H. K. Onnes	1617
Susceptibilities, Magnetic, of Elements. F. H. Loring	1143
Susceptibility in Excited Ferromagnetic State. W. H. Keesom	344
" of Gaseous Oxygen at Low Temperatures. H. K. Onnes and E. Oosterhuis	164
Temperature Effects, Anomalous, in Magnetised Steel. N. H. Williams	1138
Terrestrial Magnetism, <i>see</i> separate section.	
Thermal and Galvano-magnetic Effects in Bismuth. P. Senepa	754
Thermo-magnetism, <i>see</i> section Thermo-electricity.	
Titanium Compounds, Magnetisability of. C. Wedekind and P. Hausknecht	347
Transverse Field, Effect of, on Longitudinal Magnetisation. A. Amerio	340
Twist in Rods due to Longitudinal Magnetic Field. S. R. Williams	339
Water, Magnetic Susceptibility of. H. C. Hayes	1337
Wiedemann Phenomenon in Nickel Wires. T. Gnesotto and O. Mattioli	751
Zero-point Energy, Deviations from Curie's Law in connection with. E. Oosterhuis	165

Measurements and Use of Instruments.

Absorption in Ultra-violet, Method for Measuring. W. R. Ham, R. B. Fehr, and R. E. Bitner	1963
Actinometer, Bimetallic, Improvements in. W. Michelson	371
Air, Cooling Method of Drying, for Liquefaction. G. Claude	276
" Velocities, Pressures, and Volumes, Measurement of. W. Cramp	1657
Alternate Currents Demonstrated by Manometric Flames. H. Nagaoka	159
Alternating-current Measurements, Galvanometer as Zero Instrument in. G. Pfeiderer	967
Analyser, Bravais-Zakrzewski Elliptic. E. Perucca	448
Atmospheric-electric Methods, New. W. F. G. Swann	1865
" Electricity, Errors in Measurement of. C. Dorno	515
Barometers, Testing of, at the U.S. Bureau of Standards	803
Burns by Röntgen Rays, Means of Avoiding. M. Ménard	169
Cadmium Arc, Enclosed. T. M. Lowry and H. H. Abram	1827
Capacity, Measurement of, by Guard-ring Condenser. G. Hoffmann	1323
Circle, Repsold Meridian, Calibration of. P. Harzer, H. Kobold, and O. Tetens	800
Cloudiness, Measurement of. W. Mecklenburg and S. Valentiner ...	1822
Colloidal Solutions of Metals, Preparing. H. Morris-Airey and S. H. Long	361
Colour Sensitiveness of Photographic Plates, Correcting. H. Morris-Airey and S. H. Long	210
Compensation Methods, New, and Thermal Adjustment. J. Andrade	806

For the **Explanation** of this Index *see* p. 755.

Measurements and Use of Instruments, *continued.*

Conductivity, Absolute Thermal, of Glass. I. Williams	262
" , Atmospheric, Measurement of. W. F. G. Swann	1303
Coupling, New Method of Measuring Degrees of, and Inductances.	
F. Kiebitz	1066B
Crystal Rectification, Characteristics of. A. E. Flowers	1126
Crystallography. F. Canac	1825
Cyromagnetic Apparatus of Onnes and Perrier, Modification in. E.	
Oosterhuis	1140
Damping, Critical, Production of, in Moving Coil. P. E. Klopsteg...	1127
Densities of Dilute Aqueous Solutions by a New Method. A. B.	
Lamb and R. E. Lee	373
" , Rock, Determination of, at High Pressure. A. L. Day,	
R. B. Sosman, and J. C. Hostetter.....	375
Density of Gas or Liquid, Acoustical Estimation of. A. Kalähne ...	591
Detector of Light, Efficiency of Selenium as. E. E. Fournier d'Albe	209
Disintegrating Metals into Colloidal State, Method of. M. Kimura...	173
Doppler's Principle for Light. C. Fabry and H. Buisson	1405
Dose-meters, Radio, Comparison of. Lévy-Dorn	1342
Earth Inductor as Inclinator, Theory of. N. E. Dorsey	1146
Earth's Field, Determination of Horizontal Intensity of. W. A.	
Jenkins	563
Electromagnet to give Field of 100,000 Gauss. H. Deslandres and	
A. Perot	1136
Electrometer, Vibration. H. Greinacher	546
Electrometry with the Displacement-Interferometer. C. Barus	544
Electroscope, Wilson Tiled, Note on use of. H. W. Farwell.....	1321
Evaporation of Mercury Droplets suspended in Gas. A. Schidlof and	
A. Karpowicz.....	1569
Field Strength, Compensated Electromagnet as Standard of. R.	
Beattie.....	1893
Flow of Air through Capillary Tubes. I. M. Rapp.....	387
Focus, Equivalent, Determination of Zonal Variation of. E. D.	
Tillyer	205
Fractures, Preparation of Sections of. A. Campion and J. M.	
Ferguson.....	1162
Furnace, Graphite, Cascade Attachment for. E. F. Northrup.....	1612
Galvanometer, Einthoven String. A. C. Crehore.....	1734
" , Moving Coil Ballistic. R. L. Jones	1128
" , String, Theory of. J. K. A. W. Salomonson	545
" , String, Theory of. R. Förster	905
Galvanometers, Vibration, Null Method of Testing. S. Butterworth	1732
" " " , of Low Effective Resistance. A. Campbell	1327
Gases, Noble, Properties of. G. Gehlhoff	171
Gas Isotherms up to 3000 Atmospheres, Determination of. P.	
Kohnstamm and K. W. Walstra	891
Gramophone Records, Enlargement and Reduction of. G. A. Le Roy	918
Grating, Fundamental Law of. J. T. Howell	1979
Harmonics in Fourier Series, Methods of Finding. J. Beaufort	1181
Heat-flow, Some Aspects of. E. F. Northrup	808
Heating Vapours to High Temperatures, Method of. K. Fredenhagen	692
High-Pressure Experimenting, Technique of. P. W. Bridgman.....	804
Humidity, Relative Determination of, by Refractometer. F. Giraud	499
Hysteresis Curves, New Method of Taking. A. Ytterberg	516B
Ignition, Electrical, of Gaseous Mixtures. W. M. Thornton.....	1557
Inductance, Alternating-current Method of Comparing, with Capacity.	
J. P. Dalton.....	1733
Inductions, High, Measurement of, by Yoke Method. E. Gumlich...	1333
Interferometer in Rotation demonstrates Relative Ether Wind. G.	
Sagnac.....	65
Interrupter for Heavy Currents. B. Thieme.....	158
Intervals, very Short, of Time, Reproduction of. J. Coulson	1650

For the **Explanation** of this Index see p. 755.

Measurements and Use of Instruments, continued.

Kilogramme Force and Kilogramme Mass. A. Berger	179
Kilowatt as Unit of Power in Metric System. G. Darrieus	178
Kinematography, Stereoscopic, Process for. J. Sahulka	428
Lag and Lead demonstrated with a Braun Tube. J. F. Mohler	543
Level, Determination of, with Mercury Bath. A. Broca and C. Florian.....	589
Lightning Conductor, Use of Radium for. B. Szilard	1320
Litre. C. Lallemand	1775
Localisation of Foreign Bodies by Röntgen Rays: New Methods. G. Réchou	1150
" of Foreign Bodies with or without Compass: Three Methods. Mazères	1151
Longitude, Determination of Difference of, by Wireless Telegraphy. B. Jekhowsky.....	1940
" , Photographic Determination of Difference of. G. Lippmann	1380
Losses in Iron Sheets, Differential Method of Measuring. L. Titoff	520B
Luminescence, Photometry of. F. v. Hauer and J. v. Kowalski	1076
Magnetic Determinations, New Method for. A. Schuster.....	1902
" Elements, Earth's, Measurement of. L. A. Bauer.....	1621
" Fields, Measurement of. P. E. Klopsteg	551
" Potential, Measurement of, in Testing Iron. F. Goltze ..	518B
Magnetometers, Astatisation Device for. E. Gunlich	1334
Manometers, Spring, Use of, in Testing. A. Martens.....	801
Media of High Refractive Power for Photomicrography. C. Jones...	642
Mercury Surface, Setting of, to Required Height. M. H. Stillman ...	802
Meteorographs, Balloon, Calibration of. W. H. Dines	1384
Micrometer Microscopes, Errors in. A. W. Gray	838
" Screw, Thermal Coefficient of. G. Bigourdan	799
" , Impersonal Coincidence. A. Verschaffel	613
" , Transit, with Personal Equation. A. Claude and L. Driencourt	177
Mirrors for Lighthouses, etc., New arrangement of. E. Cannevel ...	1235
Molecular Weights of Emanations, Determination of. E. Marsden and A. B. Wood	765
" Weights of Small Quantities of Gas, Determination of. M. Knudsen	2014
Monochromatic Illumination, Spectrum Lines for. R. W. Wood ...	1063
Napierian Base, Direct Measurement of. R. Appleyard	1648
Nomenclature and Definitions of Magnetic and Electrical Quantities	308
Oscillations of Tank-water, Investigation of. K. Honda and T. Matsushita	1803
Oscillograph, Discharge-tube. H. Greinacher	937
" , Use of Telephone as. M. Siegbahn	1610
Pendulum Law, Demonstration of. A. Pizzarello	I
" of Constant Length and Variable Rate. L. Labocchetta...	1770
" , Horizontal, Application of Displacement Interferometer to. C. Barus	1179
" , Physical: Correction due to Pressure. T. Takamine ...	1478
Pendulums, Two, Ratio of Periods of. P. Le Rolland	1479
Periscopes for Submarines, Developments in. F. Weidert	1043
Photoelectric Cells, Potassium. H. E. Ives	1888
Photometry, Stellar, with Photoelectric Cell. W. F. Schulz.....	51
Planimeter, Amsler, Slip-curves of. A. O. Allen	1178
Polarising Prisms for Ultra-violet. S. S. Richardson	1821
Potentials, Electric, Measurement of, at Distance without Wires. B. Szilard	959
Potentiometers, Testing of. F. Wenner and E. Weibel	1889
Power, Electrostatic Method for Measurement of. C. C. Paterson, E. H. Rayner and A. Kinnes	392B

For the Explanation of this Index see p. 755.

Measurements and Use of Instruments, continued.

Pressure produced in Detonation of Explosives, Method for Measuring.	
B. Hopkinson.....	379
Prism with Curved Faces. C. Féry.....	1236
" , New Method for Determining Angles of. J. M. Byvoet and	
R. Sissingh	1973
Purity of Platinum Ware, Thermoelectric Determination of. G. K.	
Burgess and P. D. Sale	1625
Pyrometer, Féry Radiation, New Method of Using. G. Millochau...	1556
" , Holborn-Kurlbaum, Use of Light-filters with. M. v.	
Pirani	498
Radiation, Spectral, of Uniformly Heated Enclosure. W. W. Coblenz	901
Radiations, Ultra-violet, Absolute Measurement of. C. Winther	59
Radio-elements as Indicators in Chemistry. F. Paneth and G. v.	
Hevesy	579
Radiograph, Determination of Time of Exposure of. T. Nogier.....	168
Radiometry, Instruments and Methods used in. W. W. Coblenz ...	695
Radium in Radio-active Substances, Determination of. A. L. Fletcher	248
" Measurements by γ -Ray Method. V. F. Hess	963
Rectifiers, Mercury. W. Jaeger	1887
Refractive Index of Drop of Liquid, Measurement of. F. E. Wright	1503
Refringence, Relative, of Mineral Grains under Microscope. F. E.	
Wright	1962
Resistance, Absolute Measurements of. F. E. Smith	955
" , High-frequency, of Single-layer Coils. L. W. Austin ...	815B
" Standards, Primary Mercurial. J. Obata	1890
" Unit of the Reichsanstalt. W. Jaeger and H. v. Steinwehr	152
Resistances, nearly equal Electrical, Comparison of. G. F. C. Searle	1325
Shock-testing Apparatus, Method of Calibrating. G. Charpy and	
A. Cornu	1182
Shock Tests, Causes of Error in. Brittleness. A. Mimey.....	805
Sodium Flame, Intense. R. W. Wood	1064
Specific Gravity of Saline Solutions. J. Y. Buchanan.....	374
" Heats, Measurement of. F. A. Lindemann and F. Schwes	105
" " of Liquids, New Method for Determining. E. J.	
Hartung	1849
Spectra of Röntgen Rays, rapidly obtaining. M. de Broglie and	
F. A. Lindemann	1263
" , Flame, Uncondensed Spark for Production of. A. Harnack	1525
" , Laboratory, Registering Microphotometer for. A. S. King	
and P. P. Koch	1824
Spectrophotometry, Photographic. Colour Screens. J. Baillaud ...	442
Spectrum Laws, Wood's Method of discovering. A. Afanassieff and	
D. Roschdestwensky	73
" Lines, Measurement of Small Displacements of. J.	
Evershed.....	854
Stereoscopic Effects without Stereoscope	1052
Stress Measurements on Board Ships. Seimann	1476
Stresses in Materials and Structures, Measurements of. E. G. Coker	383
Surface-energy, Free, of Liquids from -80° to 1650°C . F. M.	
Jaeger	1948
" Tension of Amorphous Bodies, Determination of. B. Berg-	
gren	1210
" Tension of Soap Films, Measurement of. G. F. C. Searle ...	818
Suspensions, Tungsten Wire, for Magnetometers. S. Chapman and	
W. W. Bryant	377
Telectroscopy: Application of Electrolytically-produced Lumin-	
osity. L. H. Walter	1730
Telemeter, Reichenbach; Influence of Dampness of the Air. H.	
Samuel.....	443
Telescope, Adjustment of, by Auto-collimation. G. Lippmann	640
" , Newtonian, Correction of Field of. R. A. Sampson	60

For the **Explanation** of this Index see p. 755.

Measurements and Use of Instruments, continued.

Thermometer Screen, Universal, for Determination of Air Temperature. W. Köppen	403
Thermometers, Calibration of, by Floating Equilibrium. T. W. Richards and J. W. Shipley	892
Thermometers, Mercury, Exposed Stem Correction for. G. Dinnier	495
Time, Determination of, by Means of Clock. G. Beauvais	1477
Time Signals, Paris Wireless Rhythmic, Reduction of. R. A. Sampson	1773
Time-signals, Rhythmic Hourly, Registration of. J. Baillaud	1939
Transformers, Shunt Instrument, Testing. H. B. Brooks.....	11808
Ultra-violet Light, Oscillating Spark as Source of. J. de Kowalski...	1311
Unidirectional Currents within Carbon Filament Lamp. A. S. Eve, F. L. Hopwood	942
Units and Symbols, A. E. F.	1030, 1776
" of Force. O. Lehmann	2
" , Electrical. P. Janet	307
Vacua, High, Production of, by Finely-divided Copper. T. R. Merton	1180
Vapour Pressures, Partial, of Liquid Mixtures, Measuring. M. A. Rosanoff, C. W. Bacon, and R. H. White	1852
Vector Potential in Relation to Vector Angle. F. Slate.....	119
Vibrations, Damping of, in Various Materials. I. Malmberg	1378
Viscosity of Vapours of Volatile Liquids, Measuring. A. O. Rankine	360
Voltmeter, Copper, Inaccuracy of. N. Dhar	962
" , Silver. E. B. Rosa, G. W. Vinal, and A. S. McDaniel	153, 744
" , " . H. v. Steinwehr	333
" , " . W. Jaeger and H. v. Steinwehr	1609
" , " and Iodine. S. J. Bates and G. W. Vinal	1608
Wave-length of Short Electric Waves ; Disturbing Influence of Walls. M. Sjöström	733
Weighing, Quickness of, Modifications of Balance for. G. A. Shakespear	1472
Weston Normal Cell, E.M.F. of. A. N. Shaw and H. L. Callendar.	1324
Wheatstone Bridge with High-frequency Current. W. Hertwig ...	742

Metallography and Properties of Metals.

Alkali Metals, Properties of. L. Hackspill	2015
Alloys, <i>see also</i> separate section.	
Aluminium, Iron, Antimony, and Nickel, Heats of Cooling of. P. N. Laschtschenko	1753
Annealing Process, Study of, for Malleable Castings. O. W. Storey	1628
" , Minimum Temperature of. Hanriot and Lahure	989
" , Structural Changes of Iron during. D. Ewen.....	1461
Bearing Metals : Antimony-Lead-Tin Alloys. E. Heyn and O. Bauer	994
Bismuth-Cadmium-Zinc Alloys, Constitution of. C. H. Mathewson and W. M. Scott	776
Brass, Drawn, Cracking of. E. Jonson	1627
Bronze. J. Dewrance.....	1458
" , Drawn, Influence of Thermal Treatment on Strength of. P. Goerens and J. Dumont.....	996
Bronzes, Normal Copper-Tin ; Influence of Metallic Additions. H. v. Miller	773
" , Three-metal. A. M. Blow	1629
Cadmium, Allotropy of. E. Cohen and W. D. Helderman	772, 1763
" , Arsenical Compounds of, S. F. Żemczużny	1163
Case-hardening and Diffusion in Solids, Local Prevention of. L. Guillet and V. Bernard	2029
Cast-iron, Grey, Influence of Manganese on Properties of. F. Wüst and H. Meissner	1001
Cast Metals, Optical Orientation of. K. Endell and H. Hanemann	2020
Cementation by Gases, Study of. F. Kurek	1350
Cerium and its Alloys, Preparation of. M. Moldenhauer	1750
Cold Work, Ascending and Descending. Hanriot and Lahure	988

For the **Explanation** of this Index see p. 755.

Metallography and Properties of Metals, continued.

Copper-Aluminium Alloys containing 84-90 per cent. Copper. H. Hanemann and P. Merica	1161
" -Aluminium Alloys; Influence of Nickel. A. A. Read and R. H. Greaves	1465
" -Aluminium Alloys; Influence of Phosphorus. A. A. Read... ..	1459
" -Tin and Copper-Zinc Alloys, Quenched, Tempering and Annealing of. A. Portevin.....	1760
" , Allotropy of. E. Cohen and W. D. Heldermann.....	986
" , Electrolytic, Structure and Resistance of. O. Faust	1918
" , Nickel and Aluminium, Alloys of. L. Guillet	1159
" , Variation of Resilience of Industrial Alloys of. L. Guillet and V. Bernard	1348
Corrosion Committee of Institute of Metals; Second Report. G. D. Bengough and R. M. Jones.....	1457
Critical Points Ar1 , Ac1 . J. E. Stead	359
" Ranges A2 and A3 of Pure Iron. G. K. Burgess and J. J. Crowe	1003
"Crystallisation through Fatigue," So-called. F. Rogers	357
Deformation of Metals, Rapid; Influence of Time. G. Charpy and A. Cornu	1653
" , Plastic, of Steel during Overstrain. H. M. Howe and A. G. Lévy	1370
Densities of Metals at Different Temperatures. P. Pascal	1368
Density and Viscosity of Molten Metals, Determinations of. R. Arpi	596
" of some Metals in Liquid State. P. Pascal and A. Jouniaux	590
Embrittling of Iron by Caustic Soda. J. H. Andrew	1462
Etching Agent, New, for Steel. W. Rosenhain	1004
" Mild Steel, New Reagent for. W. Rosenhain and J. L. Houghton	1761
Fatigue Bending Tests of Materialprüfungsamt on Mild Steel. A. Martens	1371
" Limits under Alternating Stress, Determination of. C. E. Stromeyer	1783
Flow in Metals under Large Constant Stresses. E. N. da C. Andrade	1779
Flowing Pressure and Hardness of Plastic Bodies. N. S. Kurnakow and S. T. Žemčužny	1780
Fragility produced in Iron and Steel by Deformation. G. Charpy... ..	997
Fusible Alloys, Studies in Transformation of, in Solid State. D. Mazzotto	172
Hardening of Metals: Iron and its Alloys. C. A. Edwards and H. C. H. Carpenter	1758
" , Contribution to Theory of, A. McCance	1757
Hardness of Metals. J. H. Andrew.....	1351
Ingots, Sound. R. Hadfield	1349
Iron and Carbon, Hypereutectic Alloys of. H. Hanemann	2026
" " Steel, Transformations of, at High Temperatures. K. Honda and H. Takagi	356
" -Carbon Alloys, Hardness of. R. Vondráček	1917
" " , Thermal Expansion and Rate of Solution of. J. Driesen	1464
" -Carbon System, Calorimetric Study of. A. Meuthen	782
" -Titanium Alloys. J. Lamort	1755
" , Allotropic Transformations of. A. Sauveur.....	354
" , Effect of C, Si, Co, and Cu on γ - δ Transformation of. R. Ruer and R. Klesper	1916
" , Electro-deposited, Crystallising Properties of. J. E. Stead and H. C. H. Carpenter	355
" , Electrolytic, Microscopic Study of. O. W. Storey	1913
" , Influence of Silicon on Solubility of Carbon in. G. Charpy and A. Cornu.....	778
" , Porosity of. W. H. Perkins	1000

For the **Explanation** of this Index see p. 755.

Metallography and Properties of Metals, *continued*.

Iron, Pure, Electrical Resistance and Critical Ranges of. G. K. Burgess and I. N. Kellberg	1883
Lead, Brittleness in. O. Bauer.....	775
Manganese-Silver Alloys, Researches on. G. Arrivaut	774
Metastability of Metals in consequence of Allotropy. E. Cohen.....	987
Neumann Lines, Formation of. Matwieieff	1912
Nickel Steels, Specific Volumes of. P. Chevenard.....	2027
Nitride of Iron. G. Charpy and S. Bonnerot	1463
Overstrain, Simple, Study of. H. M. Howe	2028
Pearlite, Granular, and its Importance in Heat-treatment of Steel. Hanemann and Morawe.....	2030
Relation of Specific Heats and Melting-points of Alloys to previous Thermal History. E. Dippel	553
Repeated Stresses. C. E. Stromeyer.....	1092B
Royal Dépôt for Testing Materials (Materialprüfungsamt), Work of, for 1912	807
Rusting of Iron in Water. W. A. Bradbury.....	999
Shock Tests, Causes of Error in, and Idea of Brittleness. A. Mimey	805
" " , Continued, Effect of Notches in. E. Preuss.....	1372
Silver and Cuprous Oxide. C. H. Mathewson and C. H. Stokesbury	1347
Solidification of Metals. C. H. Desch.....	2031
Steel, Cold-drawn; Influence of Thermal Treatment. P. Goerens... ..	781
" " , Copper in; Influence of Corrosion. D. M. Buck.....	1919
" " , Influence of Copper upon. G. H. Clevenger and B. Ray	779
" " , Influence of Elements on Absorption of Carbon by. R. R. Abbott.....	777
" " , Manganese, Critical Ranges and Microstructure of. W. S. Potter	1460
" " , Manganese, Heating and Cooling Curves of. R. A. Hadfield	358
" " , Mild, Changes in, during Annealing. A. Stadeler.....	1915
" " , Silicon, Grain-growth in. W. E. Ruder	780
Steels Quenched at 100° C., Spontaneous Recalescence of. H. Schottky	995
" " , Nickel-Chrome, Transformation Points and Structure of. L. Guillet	1002
" " , Tool, Study of General Properties of. Denis	1759
" " , Velocity of Transformation of, on Heating. A. Portevin	1914
Surface Film on Polished Metals. G. T. Beilby	1373
Tensile Tests, Determination of True Stresses during. F. Hauser ...	378
Thallium, Tin, Zinc, and Nickel, Polymorphic Transformation of. M. Werner	2025
Uranium, Pure, Preparation of. A. Roderburg	2019
Weldability of Metals and Alloys. R. Amedeo	990
Zinc and Cadmium, Influence of Temperature on Volatility of. T. K. Nair and T. Turner	353
" " , Allotropy of. E. Cohen and W. D. Helderman	992, 1911
" " , Cold-worked, Recrystallisation of. G. Timofeeff	991
Zirconium. E. Wedekind.....	2021

Meteorology.

Air Records, Remarkable Upper, at Batavia. W. van Bemmelen ...	1033
" -waves in Valleys, according to Records from Variographs. W. Schmidt	607
Antarctic Expedition, German, Meteorological Observations of. E. Barkow	1382
Atmosphere, Study of Circulation of. W. N. Shaw.....	1799
Atmospheric Obscurity of 1912-13. J. Maurer and C. Dorno	1034
" " , Transparency for Radiation. F. E. Fowle	1492
" " , Normal, Return to. H. H. Kimball ...	401
Balloon and Kite Ascents, International. E. Gold	1488
Balloons, Registering, Variability of Velocity of Ascent of. R. Dietzius	189

For the **Explanation** of this Index see p. 755.

Meteorology, continued.

Barometer, Influence of Wind on, at High-level Stations. G. v. Elsner	1035
Barometers, Standard, Comparison of. W. Schmidt	1367
Captain Scott's Last Expedition, Meteorological Observations of. G. C. Simpson	1036
Climate of Eastern Siberia. A. W. Wosnessensky and A. B. Schostakowicz	1666
Cloud, Cirrus, Curious Formation of. P. Flajolet	22
" Influence of Radiation on Formation of. C. Braak	1798
Cloudiness of Sky and Duration of Sunshine. J. P. van der Stok ...	190
Clouds, Interference Colours in. R. H. Goddard	191
Free Air Data obtained at Mount Weather, Summary of. W. R. Blair.....	826
Frost Periods in South Germany. R. Hennig.....	1383
Halo, Solar, seen in Virginia. A. W. Freeman.....	1955
Humidity, Relative, of the Air by means of Refractometer. F. Giraud.....	499
Insolation, Observations on Increase of, with Elevation. H. H. Kimball	1037
Isobars, Typical Form of. T. Terada.....	1487
Meteorographs, Balloon, Calibration and Reading the traces of. W. H. Dines	1384
Observations at various Strata of Atmosphere, obtained on the "Luzerort." L. Rykatchew.....	398
Pressure and Temperature, Correlations of, in Northern Hemisphere in Winter. F. M. Exner.....	605
" and Temperature, Relations between Aperiodic Variations of. J. v. Hann	400
" in Absolute Units. W. N. Shaw	1489
Radiation Equilibrium of Atmosphere, Computation of. K. Schwarzschild	21
" , Atmospheric, and Radiation Equilibrium. R. Emden ...	20
" , Earth, Atmospheric Transmission of. A. Ångström	23
" , Nocturnal, to Space, Studies of. A. Ångström.....	606
" , Terrestrial, Transmission of, by Earth's Atmosphere. F. W. Very.....	1800
Rain to blue Sky, Methods of Transition from. W. I. Milham.....	1490
Rainbow, Third-order. H. W. Farwell.....	1956
Rainfall near Melbourne, Influence of Weather upon Nitric Acid in. V. G. Anderson	1802
" , European, and American Temperatures. W. J. Humphreys	1665
Rains, Heavy, Instrument for Recording Rate of Fall of. E. Esclançon	1364
Smoke Problem, Meteorological Aspect of. H. H. Kimball	1491
Solar Constant of Radiation. C. G. Abbot.....	825
" Radiation Intensities at Mount Weather, Va. H. H. Kimball...	1950
" " , Enfeeblement of, in Second Half of 1912. S. I. Savinov	25
Storm of February 22, 1914, Observations Made at Lyons during. P. Flajolet	1213
Sun, Energy Spectrum of. A. Defant.....	610
Sunlight, Absorption and Polarisation of. A. Boutaric	407
Sunshine Record of Spitzbergen. M. Robitzsch	609
Temperature Gradients, Vertical, between Mount Weather and Valley Stations. A. J. Henry	402
" , Virtual, of the Sky. A. Lo Surdo	608
Thermometer Screen, Universal. W. Köppen	403
Troposphere, Relations between Pressure, Temperature, and Height of. W. Köppen and F. Wedemeyer	1211
Weather-cycle Periodicities by Newcomb's Method. A. Schuster ...	1801
Winds in Lowest Layers of Atmosphere. G. Hellmann.....	1212

For the **Explanation** of this Index see p. 755.

Miscellaneous (Chemical Physics and Electro-Chemistry).

- Absorption, *see* separate section.
 Atomic Weights, *see* section Molecular Physics.
 Brownian Movements, *see* section Molecular Physics.
 Chemical Action of Penetrating Radium Rays. A. Kailan 572, 574
 " " Stimulated by Alternating Currents. S. G. Brown 1641
 Colloidal Sulphur and Selenium, Preparation of. J. Meyer 1157
 Combustion of Air in Voltaic Arc. A. I. Gorbov and V. F. Mitkevitch..... 1452
 Compressibility of Methyl Chloride. E. Bodareu 1167
 Conductivity, *see* section Conductivity and Resistivity.
 Corrosion of Metals covered with Water and subjected to u.v.-Rays. M. Kimura 175
 Crystallisation, Mechanical Stimulus to. S. W. Young and W. J. Van Sicklen..... 769
 Crystals (except Liquid and Mixed Crystals), *see* section Molecular Physics.
 " , Liquid, New Researches on. O. Lehmann 352
 Decompositions by Ultra-violet Light (Organic Compounds, Metallic Iodides). A. Kailan..... 571
 Decomposition of Complex Compounds in Varying Magnetic Fields. G. W. Heimrod..... 980
 " of Gaseous Ammonia by Radium Emanation. E. Wourtsel 1158
 " of Hydrogen Sulphide, by Radium Emanation. E. Wourtsel 764
 Diamond, Two Lecture Experiments on. W. Prandtl 1749
 Diffusion, *see* separate section.
 Disintegrating Metals and their Oxides into Colloidal State, Method of. M. Kimura 173
 Dissociation and Ionisation, *see* separate section.
 Electric Furnace Processes, *see* separate section.
 Electrochemistry of Light. X. W. D. Bancroft..... 213
 Electrodes, Normal, *see* section Batteries, Primary.
 Electrolysis, *see* separate section.
 Electrolytic Analysis, *see* separate section.
 Equilibrium, Chemical, *see* section Chemical Equilibrium.
 Flame Reactions. W. D. Bancroft and H. B. Weiser..... 1005, 1467
 Gases, for Gaseous Laws *see* separate section.
 Gelatinous Structures. R. Zsigmondy 1006
 Hydrogen, Chemical Constants of. v. Kohner and P. Winternitz ... 1636
 Indicators, Radio-elements as, in Analytical Chemistry. F. Paneth and G. v. Hevesy 579
 Interatomic Forces and Chemical Affinity. J. J. Thomson 1910
 Intra-atomic Charge. A. van den Broek 567
 " " F. Soddy 568
 Ionisation, *see* section Dissociation.
 Iron-vitriol and Silver, Capillary Crystals of. O. Mügge 770
 Liquid Crystals, Change of Form of, caused by Molecular Transformation. O. Lehmann 1153
 " Mixed-Crystals. P. Gaubert 771
 Molecular Attraction, *see* section Molecular Physics.
 Nernst's Approximation Formula. P. Winternitz 1637
 Nitrogen and Oxygen, Oxidation of. W. W. Strong 351
 " , Active. E. Tiede, E. Domcke, F. Fischer, H. B. Baker, R. J. Strutt, A. Koenig, and E. Elöd 979
 " , Active. H. B. Baker, E. Tiede, R. J. Strutt, and E. Domcke 1624
 " , Atmospheric, Fixation of, by Boron Compounds. A. Stähler and J. J. Elbert 1454
 " , Oxidation of, in Voltaic Arc. A. V. Schaposchnikow, A. Gudima, and V. Kutovski 1453
 Optical Activity and Rotation, *see* section Polarisation.

For the **Explanation** of this Index *see* p. 755.

Miscellaneous (Chemical Physics and Electro-Chemistry), *continued*.

- Osmosis, *see* separate section.
- Oxidation and Combination of Gases by Electric Discharge, *see also* section Discharge.
- Ozone Formation at Different Pressures. H. v. Wartenberg and L. Mair 1353
- Passage of Nascent Hydrogen through Iron. M. Bellati and S. Lussana 176
- Phase Rule, *see* sections Chemical Equilibrium and Thermodynamics.
- Phosphorus, Two New Modifications of. P. W. Bridgman 1745
- Platinum Ware, Method for Determination of Purity of. G. K. Burgess and P. D. Sale 1625
- Radio-elements and Periodic Law. F. Soddy 170
- Radium D, Attempts to Separate, from Lead. F. Paneth and G. v. Hevesy 578
- " , Valency of. H. Freundlich and G. v. Elissafoff 766
- Rare Gases, Attempts to produce, by Electric Discharge. T. R. Merton 1715
- Rare Gases, Production of, by Electric Discharges. J. N. Collie ... 1716
- Separation of Corpuscles in Chemical Reactions. S. M. Tanatar and E. Burkser 1747
- Solution and Solubility, *see* separate section.
- Sulphur, Glow of. W. H. Watson 768
- Thermo-chemistry and Periodic Law. W. G. Mixter 1345
- " , *see also* section Miscellaneous (Heat).
- Thermodynamic Investigations, *see* section Thermodynamics.
- Uranium, Radium, and Vanadium, Report on. R. B. Moore and K. L. Kithill 985
- Valency of Radio-Active Elements. G. v. Hevesy 982
- Vapours; for Gaseous Laws, *see* section Gases.
- Viscosity, *see* separate section, *also* section Solution.
- Miscellaneous** (Electricity and Magnetism).
- Accelerated Conductors. R. C. Tolman, E. W. Osgerby, and T. D. Stewart 1089
- Actino-dielectric Effect. F. Schmidt 1606
- Alternate-Current Research, *see* separate section.
- Arc, Electric, *see* section Discharge.
- Atmospheric Electricity, *see* section Static Electricity.
- Capacity (Electrostatic), *see* separate section.
- Cells, Voltaic, *see* section Batteries, Primary.
- Condensers, *see also* sections Dielectrics and Discharge.
- Conductivity (Electric) and Resistivity, *see* separate section.
- Contact Electricity, *see* section Batteries, Primary.
- Crookes Tubes, *see* section Discharge.
- Dielectrics, *see* separate section.
- Discharge (Electric), *see* separate section.
- " Rays, *see* section Rays.
- Earth Currents, *see* section Terrestrial Magnetism and Electricity.
- Electric Transmission of Vision. G. Rignoux 1136B
- Electrical Condition of Gold Surface during Absorption of Gases. H. Hartley 1318
- Electrification, *see* section Static Electricity.
- Electrocapillary Phenomena; Influence of Temperature. P. Kandidof 1319
- Electromagnetic Systems, Mutual Forces between. J. Bethenod ... 334
- " Theory, *see* separate section.
- Electrometer, Vibration. H. Greinacher 546
- Electrometry with Displacement-Interferometer. C. Barus 544
- Electron Atmosphere of Metals. C. R. England 1125
- " Atmospheres; Distance between Conducting Plates. F. C. Brown 147
- For the **Explanation** of this Index *see* p. 755.

Miscellaneous (Electricity and Magnetism), <i>continued</i> .	
Electron Atmospheres, Evidence for. F. F. Householder	1881
Electrostatics, <i>see</i> section Static Electricity.	
Field, Magnetic, <i>see</i> section Magnetism.	
Foam Walls, Electrical. G. Quincke	968
Galvanometer, String, Theory of. J. K. A. W. Salomonson	545
Galvanometers, <i>see</i> sections Apparatus and Measurements.	
Goldschmidt Dynamo and Electromagnetic Wave Transmission.	
O. Lodge, P. O. Pedersen	144
Hall-effect, <i>see</i> section Magnetism.	
Hysteresis, <i>see</i> section Magnetism.	
Induction, Magnetic, <i>see</i> section Magnetism.	
" (Self and Mutual), <i>see</i> separate section.	
" , Unipolar, and Dielectric. K. Fehrle	510
Interruption, <i>see also</i> section Apparatus (Electrical).	
Kathode Rays, <i>see</i> section Rays.	
Lightning, <i>see</i> section Static and Atmospheric Electricity.	
Luminosity, Electrolytically-produced : Application to Telectroscopy.	
L. H. Walter.....	1730
Magnetism, <i>see</i> separate section.	
Measurements, <i>see</i> separate section.	
Nomenclature of Magnetic and Electrical Quantities	308
Permeability, <i>see</i> section Magnetism.	
Photo-electric Cells, <i>see</i> section Batteries, Primary.	
Polarisation (Electrolytic), <i>see</i> separate section.	
Ponderomotive Force on Dielectric carrying Displacement Current.	
R. H. Goddard	1860
Potential and Elasticity, International Agreement on. A. Korn	117
" Difference, Experiments on. S. Magrini.....	542
Pyro-electricity. S. Boguslawski.....	1601
" and Quanta Theory. S. Boguslawski	1886
Rails and Slider Magneto. A. Gray	1130
Resistance Unit of Reichsanstalt. W. Jaeger and H. v. Steinwehr...	152
Röntgen Rays, <i>see</i> section Rays.	
Selenium, Action of Light on. W. S. Gripenberg	1599
" , Action of Mercury-vapour on. F. C. Brown	146
" , Behaviour of, towards Luminous Radiations. P. Pignataro	735
" , Efficiency of, as Detector of Light. E. E. Fournier d'Albe	209
" , Influence of Tellurium on Light-sensitiveness of.	
Abonnenc	1880
" , Physical Properties of. P. J. Nicholson.....	1113
" , Properties of. G. W. White	1112
" , Properties of. F. C. Brown	1879
" , Sensibility Curves of. F. C. Brown and L. P. Sieg...1442, 1878	
Specific Inductive Capacity, <i>see</i> section Dielectrics.	
Static Electricity, <i>see</i> separate section.	
Telegraphy, <i>see</i> Section B.	
Telephone Receiver, Effect of Radiation on. I. Malmer	335
Telephony, <i>see</i> Section B.	
Terrestrial Magnetism and Electricity, <i>see</i> separate section.	
Thermo-electricity and Magnetism, <i>see</i> separate section.	
Tubes, Vacuum, <i>see</i> sections Discharge and Apparatus.	
Units, Electrical. P. Janet	307
Vector Potential in Relation to Vector Angle. F. Slate	119
Voltaic Action, <i>see</i> section Batteries, Primary.	
Waves, <i>see</i> section Oscillations and Waves.	
Wireless Telegraphy, <i>see</i> Section B, <i>also</i> section Oscillations.	
X-Rays, <i>see</i> section Rays.	

Miscellaneous (General Physics).

Aerodynamics, <i>see</i> section Dynamics.
Alloys, <i>see</i> separate section.
Astronomy, <i>see</i> separate section.

For the Explanation of this Index see p. 755.

Miscellaneous (General Physics), *continued*.

- Atomic Weights, *see* section Molecular Physics, Matter and Ether.
 Bessel Function of Zero Order, Physical Interpretation of. J. Hollingworth..... 4
 Brownian Motions, *see* section Molecular Physics.
 Capillarity, *see* section Surface Tension.
 Compensation Methods, New, and Thermal Adjustment. J. Andrade 806
 Critical Constants, *see* section Critical Points.
 Deformation, *see* section Elasticity.
 Diffusion, *see* separate section.
 Dynamics, *see* separate section.
 Elasticity, *see* separate section.
 Ether, *see* section Molecular Physics, Matter and Ether.
 Expansion, *see* section Dilatation.
 Filtration Constant for Medium constituted of Spherical Grains.
 J. Boussinesq 1945
 " of Liquids through Sand or other Porous Media. J. Boussinesq..... 1943
 Fourier Analysis. F. W. Grover 385
 " Series, Methods of Finding Harmonics in. J. Beaufort..... 1181
 Gravity, *see* separate section.
 Interpolation, Formula in. L. H. Adams 3
 Kilogramme Force and Kilogramme Mass. A. Berger 179
 Litre. C. Lallemand 1775
 Measurements, *see* separate section.
 Mechanical Problems, *see* section Dynamics.
 Metallography, *see* separate section.
 Meteorology, etc., *see* separate section.
 Methods of Physical Science and their Applicability. A. G. Webster 604
 National Physical Laboratory, Report of, for 1913 1474
 Physical Discoveries, Recent. J. J. Thomson 1197
 " Knowledge, New Paths of. M. Planck 1795
 Quantum Theory and Rational Units. G. N. Lewis and E. Q. Adams 1091
 Rigidity, *see* section Elasticity.
 Similitude, Principle of. R. C. Tolman..... 1195
 Steam, Efflux, Velocity and Specific Heat of, *see* sections Gases and Specific Heat, *also* Section B.
 Stress, *see* sections Elasticity and Metallography.
 Surface Tension, *see* separate section.
 Suspensions, Tungsten Wire, for Magnetometers. S. Chapman and W. W. Bryant 377
 Torsion, *see* section Elasticity.
 Transpiration of Gases through Porous Media. J. Boussinesq 1944
 Unit of Power, Kilowatt as, in Metric System. G. Darrieus..... 178
 Units and Symbols, A.E.F. Committee 1030, 1776
 " of Force. O. Lehmann 2
 " , Designation of, for which Equations Hold. F. F. Martens ... 592
 Vibrations, Damping of, in various Materials. I. Malmborg..... 1378
 Viscosity, *see* separate section.

Miscellaneous (Heat).

- Boiling-Points, *see* section Freezing-Points.
 Calorific Effects of Joule and Siemens. L. Decombe..... 900
 Combustion and Explosive Waves, some Properties of. E. Jouguet 282
 Combustions, Permanent, in conducting Media. L. Crussard..... 694
 Conductivity (Thermal), *see* separate section.
 Convection Constants of small Platinum Wires. Hot-wire anemometry. L. V. King 1993
 " , Forced Thermal, of Platinum Wires. A. E. Kennelly and H. S. Sanborn 1994
 Dew and Hoar-frost, Formation of. A. Lo Surdo 1847
 Expansion, *see* section Dilatation.
 Explosions, *see also* section Gases.

For the **Explanation** of this Index *see* p. 755.

Miscellaneous (Heat), continued.

- Freezing-, Melting-, and Boiling-Points, *see* separate section.
 Gases and Vapours, *see* separate section.
 Heat of Formation of Hydrogen from Hydrogen Atoms. I. Langmuir 910
 Ion Clouds in Moist Expanded Air. G. Quincke 1279
 Latent Heat, *see* section Specific Heat.
 Matter in Superfused State and Discontinuity of Physical Properties near Melting-point. R. Nasini and U. Bresciani..... 1280
 Measurements, *see* separate section.
 Mechanical Equivalent of Heat. G. Guglielmo 1996
 Melting-Points, *see* section Freezing-Points.
 Photochemical Reactions, *see* section Miscellaneous (Chemical Physics).
 Pyrometry, *see* section Thermometry.
 Regelation, Well-known Experiment in. S. Suzuki 1848
 Specific Heat, *see* separate section.
 Temperature, *see* separate section.
 Trouton's Rule. C. Sonaglia..... 1693
 Temperatures (High and Low), *see* separate section.
 Thermodynamics, *see* separate section.
 Vapour Pressure, *see* separate section.

Miscellaneous (Light).

- Absorption, *see* separate section.
 Bending of Plane Waves for any Position of Incident Plane. A. Wiegrefe..... 649
 Contractions of Order of Fitzgerald-Lorentz Effect, Possibility of Detecting. C. Barus 1974
 Crookes Tubes, *see* Tubes (section Discharge).
 Diffraction, *see* section Interference.
 Dioptric Systems, Non-spherical. Boulouch 1980
 Dispersion, *see* separate section.
 Doublet, Photographic, Achromatism and Anastigmatism in. H. C. Lord..... 206
 Electrochemistry of Light. X. W. D. Bancroft 213
 Electromagnetic Emission Theory of Light. J. Kunz 1507
 " Waves, *see* section Oscillation and Waves.
 Ether, Relative Motion of, *see also* section Interference.
 Eye, Appearance of, when subjected to u.v.-Rays. G. Michaud and J. F. Tristan 1511
 Flowers, "Ultra-violet," Colouring Material of. G. Michaud and J. F. Tristan 444
 Fluorescence, *see* section Phosphorescence.
 Glass, Eye-preserving, for Spectacles, Preparation of. W. Crookes 839
 Images, Formation of, by means of Opaque Disc. A. W. Porter..... 1050
 " , Optical, Brightness of. P. G. Nutting..... 1051
 Index of Reflection, *see* section Reflection.
 " of Refraction, *see* section Refraction.
 Interference, *see* separate section.
 Kathode Rays, *see* section Rays.
 Light Propagation in Dispersive Medium. A. Sommerfeld 1413
 " -quanta. J. Ishiwara..... 1981
 Liquid Crystal, Optical Anisotropy of. D. Vorländer..... 845
 Luminous Spherical Waves. P. Sélényi 441
 Measurements, *see* separate section.
 Moving Mirror, Theory of. II. A. Harnack 646
 Objectives, Telescope, Chromatic Aberration of. H. Fassbender and A. Wethauer 204
 Optical Electrons and Ions. K. Kilchling..... 647
 " Properties of Thin Layers of Platinum. B. Pogány 1727
 " Resonance. Damping of Luminous Vibrators. L. Dunoyer 217
 Optic Properties of Liquid Mixture. A. Cotton, H. Mouton, and P. Drapier 215

For the **Explanation** of this Index *see* p. 755.

Miscellaneous (Light), continued.

Path of Light in Rotating Solid. E. M. Anderson	1508
Photo-elastic Effect in Strained Glass. L. N. G. Filon	1375
Photography, <i>see</i> separate section.	
Photometry, <i>see</i> separate section.	
Polarisation, <i>see</i> separate section.	
Ponderomotive Couple at Source of Light. P. S. Epstein	1408
" Couples of Light Source. K. Schaposchnikov.....	849
Potassium and Sodium, Optical Constants of. B. Meese	848
Pressure of Light on Perfectly Conducting Semi-plane. P. S. Epstein	1515
" of Radiation and Carnot's Principle. Rayleigh, H. L.	
Callendar	440
" of Radiation on Small Reflecting Sphere. J. Proudman ...	67
Propagation of Luminous Signal in Dispersive Medium. L. Brillouin	63
Radiation-pressure. H. L. Callendar and C. G. Darwin	439
Rainbow and Cusped Wave-fronts, Graphic Treatment of. W. R.	
Bower	1674
Rays, <i>see</i> separate section.	
Reflection, <i>see</i> separate section.	
Refraction, <i>see</i> separate section.	
Röntgen Rays, <i>see</i> section Rays.	
Rotatory Polarisation, <i>see</i> section Polarisation.	
Shadows. H. Paschen	219
Space Lattices, Optics of. M. v. Laue	871
" " of. L. S. Ornstein	874
Symmetry of Electromagnetic Tensors. M. Abraham	1516
Transparency, <i>see</i> section Absorption.	
Velocity of Light and Carnot's Principle. E. Guillaume	218
" " , Constancy of. E. Freundlich.....	66
" " " of. W. de Sitter	436, 846
X-rays, <i>see</i> section Rays.	
Zonal Variation of Equivalent Focus, Determination of. E. D. Tillyer	205

Molecular Physics, Matter and Ether.

Æther, Reality of. G. Sagnac	216
Atom, Bohr's Model, Stability of. L. Föppl.....	1664
" , Intra-atomic Charge and Structure of. A. van den Broek.....	569
" , Structure of. J. J. Thomson	14
" " of. E. Rutherford	570, 1031
" " of. W. Peddie	810
" " of, and Intra-atomic Electrons. A. van den Broek	812
" , Viscosity of. L. Decombe	389
Atomic Charge and Atomic Ionisation. F. Sanford	763
" Dimensions and Constitution. A. Heydweiller	392
" Models, Essential Foundations for. F. A. Lindemann.....	1196
" Structure. J. J. Thomson	391
" " . A. van den Broek, J. W. Nicholson.....	1480
" " and Helium Spectrum. J. W. Nicholson	1832
" " and High-frequency Spectra. J. W. Nicholson	1246
" Weight of Copper by Electrolysis. A. G. Shrimpton	2013
" " of Lead of Radio-active Origin. T. W. Richards	
and M. E. Lambert	1751
" Weight Relations, Curious. F. H. Loring	981
" Weights. F. H. Loring	1623
" Weights, Contested, Application of Laws of Transparency	
of Matter to X-rays to fixing of. L. Benoist and H. Copaux	1152
Atoms and Molecules, Constitution of. N. Bohr	15, 811
" , Light, Collision of α -particles with. C. G. Darwin.....	1032
" , Positive Charges of. J. Stark	762
Brownian Movement, Study in. I. J. H. Shaxby and E. Emrys-	
Roberts	1202
" Movements, Observation of. F. Bourrières	182
Copper, Crystalline Structure of. W. L. Bragg	1908

For the **Explanation** of this Index see p. 755.

Molecular Physics, Matter and Ether, continued.

- Crystal-angles of Quartz; Change with Temperature. F. E. Wright 393
 " Structure from Interference Photographs by X-rays. P. P. Ewald 1422
 Crystals, Analysis of, by X-ray Spectrometer. W. L. Bragg 876
 " , Rock-salt, Deformation of. T. Terada 1654
 " , Structure of, as indicated by X-rays. W. L. Bragg 87
 Crystallography. F. Canac 1825
 Densities of Metals at Different Temperatures. P. Pascal 1368
 Density of Ice. E. Griffiths 895
 " of Some Metals in Liquid State. P. Pascal and A. Jouniaux 590
 " of Sulphur, Change of, with Rupture. A. F. Melcher..... 1785
 " , Mean, of Fractured Rocks. G. F. Becker 1784
 Diamond, Space Lattice of. M. Born 1381
 " , Structure of. L. Föppl 984
 Electrons, *see* section Electromagnetic Theory.
 Elements, Constitution and Structure of. H. Collins 1168
 " , Ordinals of. J. R. Rydberg 2012
 Ether Radiation. A. v. Schütz..... 220
 " and Relativity. L. Page..... 1797
 " , Circulation of, in Rotating Interferometer. G. Sagnac..... 1506
 Gelatinous Structures. R. Zsigmondy 1006
 Gyroscopic Quanta. R. A. Fessenden 1198
 Interatomic Forces and Chemical Affinity. J. J. Thomson 1910
 Intra-atomic Charge. A. van den Broek 567
 " " F. Soddy 568
 Kinetic Theory of Gases, *see also* section Gases.
 Liquid Crystals, Molecular Structure of. J. S. van der Lingen 566
 Matter, does it displace Ether? C. V. Burton..... 1796
 Molecules, Gaseous, Determination of, by Maxwell's Theory. P. Kotournitzky 16
 " , Method of Measuring Dimensions of. W. Altberg 126
 " , Volume of, and of Component Atoms. J. D. van der Waals 1352
 Polymorphism, Theory of. G. Tammann 983
 Quantum Theory and Radiation. J. H. Jeans 1549
 Space-grating, Zincblende. P. P. Ewald 1539
 Thin Layers on Water, Molecular Transformation of. H. Labrouste 817
- Oscillations and Waves (Electric), *see also* sections Rays, Discharge.**
 Antennæ, Radio-telegraphic, Capacity of. G. W. O. Howe 1072B
 Arc and Spark Radio Transmission, Further Comparison of. L. W. Austin 236B
 " , A.C., as Generator of Electric Oscillations. H. Rukop and J. Zenneck 821B
 " , Production of Electric Oscillations by. J. Zenneck 1105
 Coil, Single-layer, Calculation of Free Period of. W. Lenz 1107
 Condenser, Question of Oscillatory Discharge of. V. Smirnoff and A. Fridmann 1104
 Coupled Oscillation Systems with Single Frequency. A. Kalähne ... 327
 " Oscillatory Circuits. Provotelle 1441
 " Receiver in Wireless Telegraphy. H. Riegger 953
 " Systems, Oscillations of. S. Janss 328
 Coupling, Magnetic, General Law of. F. Kiebitz..... 954
 Crystals and other Detectors, Sensitiveness Tests of. P. R. Coursey 1315
 Damping of Hertzian Oscillators. G. Leimbach..... 950
 " of Oscillatory Discharges. F. L. Talamo..... 143
 Decrement of Short Waves; Disturbing Influence of Walls. M. Sjöström 733
 Diffraction of Electric Waves at Dielectric Cylinder. Kobayashi-Iwao..... 1594
 " of Electric Waves Round Reflecting Sphere. H. M. Macdonald 1313

For the **Explanation** of this Index *see* p. 755.

Phosphorescence and Fluorescence, continued.

Fluorescence of Sulphur, Selenium, and Tellurium Vapour. W. Steubing	242
" , Dynamical System illustrating. N. P. McClelland ..	1074
" , Effect of Magnetic Field on. W. Steubing	471
Luminescence of Coloured Gelatine, Decay of. A. Pospiclow.....	1259
" of Kunzite. E. L. Nichols and H. L. Howes.....	1684
" , E. F. Farnau	473, 1685
" , Colour Photography of. J. M. Lohr	472
" , Photometry of. F. v. Hauer and J. v. Kowalski ..	1076
" , Production of, by Kathode Rays. E. Ohlon.....	241
Phosphorescence of Mercury Vapour. F. S. Phillips.....	470
Phosphorescent Compounds, Energy-distribution in Spectra of. P. Borissow.....	469
Sulphur, Glow of. W. H. Watson	768
Thermoluminescence; Lecture Experiment. F. J. Harlow.....	721

Photography.

Actinic Effect of Illuminants, Measuring. F. M. Steadman	1672
Autostereoscopic Photography. E. Estanave	1504
Colour Photography, Lippmann, Theory of. K. Försterling	1505
Density in Dry Plates and Photographic Photometry. A. Callier ..	211
" Meters, Photographic. F. F. Renwick	1972
Developed Image, Distribution of Silver Granules in. O. Tugman ..	1976
Development and Fixing, Simultaneous. C. Otsuki and T. Sudzuki ..	1975
" , Photographic, Physical Chemistry of. C. E. K. Mees ..	212
" , Want of Uniformity in. H. Seemann... ..	1969
Diffraction Photographs, New. M. E. Hufford	1540
Gradation: Measurement of Gamma. F. F. Renwick	1971
Latent Image, Photographic, Light-energy for. P. G. Nutting	214
Phosphorescence, <i>see</i> separate section.	
Photochemical Equivalent. E. C. C. Baly	221
Photomicrography, Media of High Refractive Power for. C. Jones ..	642
Plates, Photographic, Correcting Colour Sensitiveness of. H. Morris-Airey and S. H. Long	210
" , Photographic Resolving Power of. P. G. Nutting	1970
" , Speed of; Testing by Daylight. W. B. Ferguson	1054
Positives, Direct Photographic. G. A. Perley, T. J. Twomey, and H. A. Robinson.....	1055
Reversal in Photography, Preventing. R. E. Crowther.....	1968
Röntgen Rays, Photographic Action of, <i>see</i> section Rays.	
Spectrophotography, Quantitative. H. Ewest	843
Tone-values, Photographic, Control of. A. Kapteyn	1053

Photometry.

Industrial and Technical Photometry, <i>see</i> Section B.	
Integration of Light from Variable Source. H. S. Hatfield	1978
Measurements, <i>see</i> separate section.	
Objective Photometry. W. E. and R. Pauli	69
Photographic Photometry. A. Callier.....	211
Selenium Photometry. E. Carlo	1407
Spectrophotography, Quantitative. H. Ewest	843
Standard of Light, Further Research on Electric Arc as. J. F. Forrest	106B
Ultra-violet Photometry. J. Elster and H. Geitel.....	842

Polarisation (Electrolytic).

Aluminium Rectifier, Polarisation in. C. W. Greene	1643
Passivity of Metals. G. Senter, G. Grube, G. Reichinstein, H. S. Allen, M. Le Blanc, G. C. Schmidt, G. Schulze, and A. P. Schoch.....	1646
Polarisation Capacity of Electrode under Alternating E.M.F. P. Vaillant	789
Rectifiers, Electrolytic. G. Schulze and R. Lindemann.....	1642
" , Metallic. W. Winter	154

For the **Explanation** of this Index *see* p. 755.

Radio-activity, continued.

β -Rays from Radium A, Experiments to detect. W. Makower and S. Russ	882
" from Radium B and Radium C, Analysis of. E. Rutherford and H. Robinson.....	251
" of different Velocities, Relative Ionisation in Gases by. R. D. Kleeman	1427
" of Radium (B + C), Distribution in Magnetic Spectrum of. J. Chadwick	1426
" of Radium Products. J. Danysz.....	486
" , Absorption of. H. Starke.....	683
" , Scattering of Particles of Matter with. M. Levitska.....	93
β - and γ -Rays and Structure of Atom. A. van den Broek.....	1544
Coal, Radio-activity of, and Helium in Coal-mine Gas. C. Moureu and A. Lepape	889
Constants, Radio-active, Tables of. L. Kolowrat	885
δ -Rays from Gases. N. Campbell	490
" , Speed of. N. Campbell.....	255
Elements, Radio-active. F. H. Loring	1909
Emanation, Actinium. Determination of Molecular Weights of Emanations. E. Marsden and A. B. Wood	765
" , Freshly-formed Radium, Activity of. H. H. Poole	1272
" , Radium, Decay of, in Atmosphere of Helium. W. Marckwald	1430
" , Radium, Decomposition of Hydrogen Sulphide by. E. Wourtsel.....	764
" , Radium, Refractive Index of. A. W. Porter and C. Cuthbertson	1273
" Radium, Tables of Exponential Functions relative to. L. Kolowrat.....	484
Emanations, Thorium and Actinium, Periods of Transformation of. P. B. Perkins	1274
γ -Radiation from Radium, Number of Ions produced by. A. S. Eve... ..	883
" , Penetrating, Measurements of. V. F. Hess.....	491
" , " , of Mesothorium and Radium. O. Hahn ..	1428
" , Secondary. D. C. H. Florance	884
γ -Rays from Products of Thorium Series. L. Meitner and O. Hahn ..	257
" " Radium D and Radium E, Analysis of. E. Rutherford and H. Richardson	94
" from Uranium Products. H. Richardson.....	886
" of Polonium, Radium, and Radio-actinium. A. S. Russell and J. Chadwick	489
" of Radium, Scattering and Absorption of. J. A. Gray	253
" of Thorium and Actinium Products, Analysis of. E. Rutherford and H. Richardson	487
" , Absorption of. S. Oba	1271
" , Excitation of, by β -Rays. H. Starke	684
" , Reflection of, from Crystals. E. Rutherford and E. N. da C. Andrade	254
" , Soft, from Radium B, Wave-length of. E. Rutherford and E. N. da C. Andrade	1543
Ionisation in Closed Vessel. E. v. Schweidler	1844
" , <i>see also</i> sections Dissociation and Discharge.	
Penetrating Atmospheric Radiation, <i>see</i> section Rays.	
Radio-actinium, Complexity of. O. Hahn and L. Meitner	104
" -active Products in Solution, Action of Colloids on. T. Godlewski	1451
" -elements and Periodic Law. F. Soddy.....	170
Radium, Determination of, in Radio-active Substances. A. L. Fletcher	248
" D and Final Product of Radium Disintegration Series. R. Whytlaw-Gray	95

For the **Explanation** of this Index see p. 755.

Radio-activity, continued.

Radium D, Attempts to Separate, from Lead. F. Paneth and G. v. Hevesy	578
„ D, Question of Separation of, from Lead. C. Staehling	767
„ Emanation, Decomposition of Ammonia by ; Temperature Influence. E. Wourtsel	1158
„ Emanation, Quantitative Determination of. L. Flamm and H. Mache	247
„ Measurements by γ -Ray Method. V. F. Hess	963
„ Rays, Penetrating, Chemical Action of. A. Kailan	572, 574
„ Distribution of Active Deposit of, in Electric Field. E. M. Wellisch	249
„ Radiation of, at Temperature of Liquid Hydrogen. Mme. P. Curie and H. K. Onnes	96
„ Valency of. H. Freundlich and G. v. Elissafoff	766
Rocks of Kolar Goldfields, Radio-activity of. H. E. Watson and G. Pal	1688
Rubidium Rays, Magnetic Deflection of. K. Bergwitz	92
Soil-air at Potsdam, Registering the Emanation Content of. K. Kähler	685
Solutions of Radio-active Products. T. Godlewski	1017
„ Radio-active, Fluctuations of Concentration in. T. Ehrenfest	98
Springs near Williamstown, Radio-activity of. J. E. Shrader	1547
„ Carbonated, of Mt. Iduna, Radio-activity of. D. Isitani	261
„ Japanese Hot, Radio-activity of. H. Ikenti	686
„ Mineral, Radio-activity of. D. Isitani	890
Thorium C and Actinium C, Range of Recoil Atoms from. A. B. Wood	258
„ Family, End Product of. R. W. Lawson	1686
„ Series. P. Beer and K. Fajans	481
„ Experiments with Active Deposit of. E. Marsden and R. H. Wilson	97
„ Lead and Final Product of. A. Holmes	1275
Transformations, Radio-active, Parallelisms in. K. Fajans	482
Uranium and Radium, Life of. S. Meyer	480
„ X, Disintegration of. A. Fleck	99
„ X ₂ . O. Hahn and L. Meitner	103
„ X ₂ K. Fajans and O. Göhring	256
„ Y. G. N. Antonoff	102
„ Y. O. Hahn and L. Meitner	1546
„ Y, Existence of. F. Soddy	488
„ Radium and Vanadium, Report on. R. B. Moore and K. L. Kittril	985
Valency of Radio-active Elements. G. v. Hevesy	982
Waters of Spa, Radio-activity of. E. Gerard and H. Chauvin	687
Zircons, Colour of, and its Radio-active Origin. R. T. Strutt	494

Rays and Radiation.

Black-body Radiation. G. W. Walker	705, 1287
Canal-ray Secondary Radiation. H. Baerwald	527
„ Rays. E. Goldstein	2007
„ „ Analysis of. J. Stark	713
„ „ Excitation of Light by. W. Wien	1073
„ „ Secondary Radiation from, on Insulator. J. Koenigsberger and A. Gallus	1872
Convection Constants of small Platinum Wires. L. V. King	1993
„ Forced Thermal, of Platinum Wires. A. E. Kennelly and H. S. Sanborn	1994
Debye-effect. M. v. Laue and J. S. van der Lingen	870
„ E. Schrödinger	1423
Field-Canal Rays. E. Wagner and J. Kutschewski	123
„ „ J. Stark	714

For the **Explanation** of this Index see p. 755.

Rays and Radiation, *continued.*

Flames, Character of Luminous Meta Vapours in.	H. Kohn.....	1555
Gas, Natural Radiation from.	G. Green	1433
Infra-red, Determination of Emissive Power in.	M. Drecq	1412
Interference Spots, Intensity of, with Zinblend.	P. P. Ewald.....	1539
Kathode Particles, Passage of, through Gases.	L. W. McKeehan ...	1714
" Rays, Absorption of, by Metallic Sheets.	R. Whiddington ..	313
" " , Ionisation produced by.	J. L. Glasson	948
" " , Production of Light by, in Hydrogen.	J. Holtsmark	1586
" " , Transmission of, Through Matter.	R. Whiddington ..	1307
Magnetic Rays in Various Gases and Gas Mixtures.	A. Righi.....	1582
Penetrating Atmospheric Radiation.	W. Kolhörster	888
" " " H. Benndorf, Dorno, Hess,		
v. Schweidler, and T. Wulf		931
" Radiation.	V. F. Hess	259
" " K. Bergwitz		492
" " , from Earth, Gradient of.	L. V. King	260
" γ -Radiation from 1000 to 4000 Metres.	V. F. Hess.....	491
" Radiation, Earth's.	J. C. McLennan and A. R. McLeod ..	493
Phosphorus, Radiation accompanying the Oxidation of.	A. Blanc... ..	1842
Planck's Radiation Theory and Undamped Vibrations.	C. W. Oseen	914
Point Source close to Surface separating two Media, Radiation of.	L. Mandelstam	1510
Pressure of Radiation and Carnot's Principle.	Rayleigh, H. L. Callendar	440
Quantum Theory.	M. Wolfke	445
Radiant Heat, Fundamental Relation in Theory of.	T. Levi-Civita ..	1290
Radiation.	J. E. Ives	110
" and Free Electrons.	J. H. Jeans.....	704
" and the Quantum Theory.	J. H. Jeans	1549
" -pressure.	H. L. Callendar, C. G. Darwin.....	439
Radio-activity, see separate section.		
Residual Rays of Long Wave-length.	H. Rubens and H. v. Wartenburg	693
Resonance Radiation, see section Spectra.		
Röntgen Patterns of Boracite, obtained near Inversion Point.	H. Haga and F. M. Jaeger	1261
" Radiation, Scattered, Distribution of.	H. A. Wilson.....	1077
" " , Spectral Analysis of.	P. Debye	478
" -ray Absorption Band.	W. H. Bragg	880
" Beams emitted by Antikathodes, Spectra of.	M. de Broglie	1080
" -ray Interference Bands, Sharpness of.	E. Schrödinger ..	680
" " Photographs from Regular Crystals.	M. v. Laue.....	90
" " Reflection.	C. G. Darwin	1079, 1262
" " Spectra.	M. de Broglie	675
" " , and Atomic Models.	F. A. Lindemann	475
" " " " " N. Bohr and H. Moseley ..		476
" " " " " J. W. Nicholson		477
" " " Photography of.	M. de Broglie	243
" Rays, Crystalline Structures revealed by Diffraction of.		
G. Friedel		879
" Rays, Effect of Magnetisation on Opacity of Iron to.	A. H. Forman	1537
" Rays, Energy of.	R. T. Beatty	245
" " , Interference of, and Heat Motion.	P. Debye	1078
" " " R. Glocker		1421
" " , Laws of Transparence of Matter to.	L. Benoist and H. Copaux	869, 1152
" Rays, Measurements of Intensity and Hardness of.	H. Kröncke	1264

For the **Explanation** of this Index see p. 755.

Rays and Radiation, continued.

Röntgen Rays, rapidly obtaining Spectra of. M. de Broglie and F. A. Lindemann.....	1263
" Rays, Reflection of. M. de Broglie, E. Jacot	483
" " , Secondary, Spectral Analysis of. M. de Broglie	1837, 1838
" " , Spectrum of. M. de Broglie.....	244
Rubidium Rays, Magnetic Deflection of. K. Bergwitz	92
Selective Radiation from Various Substances. W. W. Coblentz.....	208
Space Lattices, Optics of. M. v. Laue	871
" " " " of. L. S. Ornstein	874
Spectral Radiation of Uniformly Heated Enclosures, Constants of. W. W. Coblentz	901
Stefan Radiation Law, Constant of. W. H. Westphal	289
Thermodynamics of Radiation. H. L. Callendar	1550
Wien's Law. R. Hargreaves	1289
" Radiation Formula. G. Krutkow	909
X-radiation, Asymmetric Diffraction of. I. G. Rankin and W. F. D. Chambers	1989
" , Asymmetric Haloes with. W. F. D. Chambers and I. G. Rankin.....	1841
" , Secondary Electronic Radiation produced by. A. J. Philpot	1260
X-ray Bulb, Influence of Hardness of, on Interference Effects. W. Friedrich	673
" Interference Maxima. G. Wulff and N. Uspenski	88
" " Patterns. M. de Broglie	670
" " " . E. Hupka	679
" " , Influence of Temperature in. M. v. Laue	875
" Patterns of Triple Symmetry. P. P. Ewald	674
" Spectra. J. Herweg	877
" " . M. de Broglie	878
" " . G. E. M. Jauncey	1266
" " given by Sulphur and Quartz. W. H. Bragg.....	1265
" " , Observation of, on Fluorescent Screen. M. de Broglie, F. A. Lindemann.....	676
" Spectrometer, Analysis of Crystals by. W. L. Bragg.....	876
" " : Influence of Constituents of Crystal on Form of Spectrum. W. H. Bragg	672
X-rays and Crystalline Structure. W. H. Bragg	1541
" and Metallic Crystals. E. A. Owen and G. G. Blake	681
" , Anomalous Effect with. F. R. Gorton	83
" , Characteristic, Absorption of, by Gases and Vapours. R. C. Gowdy.....	84
" , Crystal Structure from Interference Photographs by. P. P. Ewald	1422
" , Diffraction of, and Crystalline Symmetry. G. Friedel.....	671
" , Experiments on Reflection of. R. W. A. Salmond	246
" , Hard, Secondary Rays due to. J. Laub	868
" " , Transmission of. J. Laub	1843
" , Homogeneous, Ionisation in Various Compounds by. H. Moore	682
" , Interference of. G. Wulff and N. Uspenski	89
" " " of. L. S. Ornstein	479
" " " of. W. Friedrich	872
" " " of. E. Wagner, R. Glocker	873
" , Passage of, through Metals. P. Knipping	678
" , Reflection of, by Crystals. W. H. Bragg	86, 1840
" , Secondary. J. Laub	677, 1424
" " , Spectra of. M. de Broglie	1538
" , Spectrum of, obtained by means of Fibrous Substances. S. Nishikawa	1988

For the **Explanation** of this Index see p. 755.

Rays and Radiation, continued.

X-rays, Structure of Crystals as indicated by Diffraction of. W. L. Bragg	87
„ „ Transmission of, through Fibrous Substances. S. Nishikawa and S. Ono	85

Reflection of Light.

Fluids, Reflection from, in Ultra-red. A. K. Angström	207
Fresnel's Reflection Formulæ. A. Wiegrefe	1512
Heat-rays, Long-waved, Reflection of; by Gratings. T. J. Meyer ...	841
Images due to repeated Reflection within Prism. J. M. Byvoet and R. Sissingh	1973
Internal Reflection at Surface of Uniaxial Crystal. J. Walker	851
Measurements, <i>see</i> separate section.	
Phase Change by Reflection—Primarily in the Ultra-violet. O. H. Gish	1502
„ -variation of Light totally reflected. S. Rybár	430
Reflection of Light at Confines of Diffusing Medium. Rayleigh	429
Röntgen Rays, Reflection of, <i>see</i> section Rays.	
Scattering in the Case of Reflection from Transparent Grating. C. Barus	431
Solutions, Selective Reflection of Infra-red Light by. A. K. Angström	840
Unpolished Substances, Law of Reflection by. B. Fessenkoff	1965

Refraction of Light.

Double Refraction of Metallic Films. C. Bergholm	643
„ „ „ Electric and Magnetic. W. Voigt	62
„ „ „ Magnetic, of Bravais' Iron, Excitation of. A. Marchetti	1411
Gases, Refraction in, <i>see also</i> separate section.	
Grating, Space, Refraction of Light in. E. Buchwald	1044
Measurements, <i>see</i> separate section.	
Nitrogen Peroxide, Gaseous, Refraction of. C. and M. Cuthbertson	61
Refraction and Absorption Indices for Thin Copper. W. Planck ...	1676
Refractive Index and Density. I[rene] M. Mathews	1826
„ „ of Gaseous Mixtures. S. Valentiner and O. Zimmer	435
„ „ of Gaseous Mixtures. S. Valentiner	1046
„ „ of Liquid Crystals. W. Kreide	641
„ „ of Radium Emanation. A. W. Porter and C. Cuthbertson	1273
Refringence, Relative, of Mineral Grains under Microscope. F. E. Wright	1962
Röntgen Rays, Refraction of, <i>see</i> section Rays.	
Strain in Large Glass Bodies due to their Weight. E. Zschimmer ...	438
Sulphides in the Infra-red. I. B. Crandall	449

Solution and Solubility.

Brownian Movements, <i>see</i> section Molecular Physics.	
Charge, Electrical, of Suspended Particles; Effect of Light. S. W. Young and L. W. Pingree	783
Colloidal Gold, Colour-changes in. S. H. Long	362
„ Particles, Nature of Double Layer in. E. Kimura	174
„ Solution, Kinetic Energy of Particles in. A. Wertgren	787
„ Solutions of Metals, New Method of Preparing. H. Morris-Airey and S. H. Long	361
„ State, Importance of Viscosity for Study of. W. Ostwald ...	363
Colloidally Dissolved Substance, Distribution of, over Two Layers. W. Reinders	1007
Colours of Cobalt Salts in Solution. J. E. Marsh	1632
Concentrated Solutions, Extension of Dilution Law to. J. Kendall	2036
Concentration of Ionised Substances in various Solvents. C. A. Kraus and W. C. Bray	785
Conductivity, <i>see</i> separate section.	

For the **Explanation** of this Index *see* p. 755.

Solution and Solubility, continued.

Corrosion of Metals covered with Layer of Water and subjected to u.v.-Rays. M. Kimura	175
Dilution Law, New, and Utilisation of Osmotic Data. W. R. Bousfield.....	2038
Dissolved Substances, Law concerning Diffusion of. G. McP. Smith	1928
Emulsion, Colloidal, Fluctuations of Concentration in. R. Costantin	2033
Emulsions, Osmotic Compressibility of. J. Perrin, R. Costantin.....	1634
Fluidity as Function of Volume, Temperature, and Pressure. E. C. Bingham.....	2037
Foaming Solutions, Classification of. S. A. Shorter	1635
Gases, Solubility of, in Liquids. M. Kofler	1354
Hydration, and Surface Tension in Solution. M. Padoa and G. Tabellini	788
Inorganic Salts, Compressibilities of Solutions of. W. Watson.....	1925
Intermiscibility of Liquids. J. Holmes	1356
Kohlrusch's Law of Additivity. G. Boizard.....	784
Precipitates, Limits of Visibility of. L. Rolla	1359
Precipitation of Metals from Solutions of their Salts by Yellow Phosphorus. R. M. Bird and S. H. Diggs.....	1920
Radio-active Products in Solution, Action of Colloids on. T. Godlewski	1451
„ Products, Solution of. T. Godlewski.....	1017
„ Substances, Colloidal Solutions of. F. Paneth.....	580, 1450
Radium Emanation and other Gases, Solubility of, in Liquids. S. Meyer	577
RaEm, Solubility of, in Aqueous Salt Solutions. M. Kofler	1166
Saline Solutions, Specific Gravity of. J. Y. Buchanan	374
Salt Solutions, Relationship between Viscosity and Temperature of. W. J. Walker.....	1165
Nitrous Oxide, Solubility of; Influence of Colloids. A. Findlay and O. R. Howell.....	1631
Solvent Power and Dielectric Constant of Liquid. W. E. S. Turner and C. C. Bissett	2032
Viscosity, <i>see also</i> separate section.	

Sound.

Absorption of Sound by Various Materials. H. O. Taylor.....	295
Aeolian Tones. F. Krüger and A. Lauth	1567
Architectural Acoustics. F. R. Watson	1564
Arc, Singing, Sound Intensity of. H. Lichte	293
Combination Tones in Microphone-Telephone Circuit. E. Waetzmann	294
Combinational Vibrations maintained by Two Harmonic Forces. C. V. Raman	1696
Coupled Systems, Vibrations Proper to. P. Debye and J. Kern	1565
Diffraction, Sound. G. W. Stewart and H. Stiles	1292
Ear, Sensitiveness of, to Musical Sounds. Marage	1566
Explosion, Quarry, at Wiener-Neustadt. J. H. Dörr	1295
Gramophone Improvements. A. A. Campbell Swinton	290
„ Records, Enlargement and Reduction of. G. A. Le Roy	918
Hearing Apparatus examined by Rayleigh Disc. H. Zwaardemaker	303
Illusions, Aural. M. Alliston.....	919
Interference Experiment, Quincke's. H. Riegger and J. Zenneck ...	1293
Localisation, Binaural, Sum of Sound Intensities. G. W. Stewart ...	304
Motion in Periodic Field of Force. C. V. Raman	1697
Musical Scale. A. Vaucher.....	300, 1698
Pianoforte Touch. G. H. Bryan	301
Plane Waves of Sound. J. R. Wilton	298
Propagation of Sound in Heterogeneous but Non-absorbing Fluid. M. Brillouin	299
Recording of Acoustic Vibrations of String Electrometer. G. Gianfranceschi	917

For the **Explanation** of this Index see p. 755.

Sound, continued.

Reed Instruments, Air-pressures used in Playing. C. W. H. Foord...	921
Resonance, Range and Sharpness of, and their Variations with Pitch. E. Waetzmänn	916
Sound Effects on Passage of Currents at Contact of Point on Crystal. R. Dongier and C. E. Brazier.....	292
" Selection by Microtelephone. H. Zwaardemaker	302
Sounding Board in Auditorium. F. R. Watson	297
Strings, Vibrating, Analogous to Loaded and Unloaded Telephone Cables. J. A. Fleming	296
Telephone Membranes, Vibrations of. M. Siegbahn	291
Velocity of Sound in Gases, Influence of X-rays upon. W. Küpper	1294
Vibratory Motions under Incident Sound Waves. E. Waetzmänn...	1297
Whispering Galleries. Rayleigh	920

Specific Heat and Latent Heat.

Heat Capacity of Metals at Low Temperatures. E. H. Griffiths and E. Griffiths	1846
Latent Heat of Fusion. G. Tammann	268
" " " of Ice. H. C. Dickinson, D. R. Harper, and N. S. Osborne	894
" Heat of Vapours, New Formula for. M. P. Appleby and D. L. Chapman	1286
Specific Heat. M. Trautz	903
" " and Radiation. H. L. Callendar	286
" " of Granite in Basalt at High Temperature. H. H. Poole	689
" Heat of Helium. A. Eggert	1561
" " of Metallic Alloys consisting of Solid Solutions. L. Rolla	1560
" Heat of Sodium, Solid and Liquid ; Latent Heat of Fusion. E. Griffiths	1083
" Heat, Theory of. D. A. Goldhammer	902
" Heats and Natural Vibrations. M. Born	913
" " and Principle of Similitude R. C. Tolman	1691
" " and Space-lattice Vibrations. H. Thirring... 266, 904, 905	
" " of Air and Carbon Dioxide. J. R. Partington	691
" " " at Constant Pressure. L. Holborn and M. Jakob	690
" Heats of Certain Binary Liquid Mixtures. A. Campetti.....	1278
" " " Diatomic Gases. W. Escher.....	264
" " of Chlorine, Ratio of. J. R. Partington	1559
" " of Gases, Ratio of. H. N. Mercer	1690
" " of Liquids at Constant Pressures and Various Tem- peratures. S. Lussana.....	1689
" Heats, Anomalous, of Certain Alloys. O. Richter	265
" " , Difference of, with Liquids. T. Peczkalski.....	267
" " , Investigations of, at Low Temperatures. W. Nernst and F. Schwes	1084
Vibrations of Solids, Enumeration of. R. Ortway	285

Spectra.

Absorbing Power of Arc for its own Radiations. G. Gouy	1251
Absorption Lines, Series. C. Fuchtbauer and W. Hofmann.....	669
" Spectra at very Low Temperatures. A. Mazzucchelli ...	1679
" " , New Type of. J. Koenigsberger and K. Vogt...	861
" " , Study of, by Radiomicrometer. J. S. Guy and H. C. Jones.....	454
" Spectra, Variability of. G. H. Livens	227, 860
Acetone, Absorption Bands of. J. Stark	74
" , Ultra-violet, Absorption of. H. T. Clark and A. W. Stewart	652
Aluminium, Arc and Spark Spectra of. R. Grünter	78
" , Band Spectrum of. A. de Gramont	464
Arc and Spark Lines with the Tube-arc. A. S. King	452

For the Explanation of this Index see p. 755.

Spectra, continued.

- Arc Light, Investigation of, with Spectroheliograph. O. Oldenberg 451
 " Spectrum, Variations of. M. Hamy and Millochau..... 1418
 Band Spectra and their Modifications. H. Delandres and L. d'Azambuja..... 237
 " Spectra, Structure of. R. Fortrat 668
 Bromine Vapour, Absorption of Ultra-violet-Light by. G. Ribaud... 450
 Cæsium Absorption Lines. C. Führtbauer and W. Hofmann 230
 Calcium Arc *in Vacuo*, Spectrum of. H. Crew and G. V. McCauley 858
 Canal Rays, Oxygen, Spectrum of. J. Stark, G. Wendt, and H. Kirschbaum 75
 " -ray Spectrum of Hydrogen, Magnetic Effect on. W. Wien... 661
 Carbon and some of its Compounds, Spectra given by. W. M. Watts 1681
 Classification of Spectra. F. Croze 655
 Comparison Spectrum, Lead Pencil. J. Lunt 1417
 Copper, Arc and Spark Spectra of, in International Units of. K. Hasbach 1524
 Crossed Spectra obtained by Combinations of Interferometers. H. Nagaoka and T. Takamine 77
 Cyanogen Bands, So-called. W. Grotrian and C. Runge 1528
 Damping of Luminous Vibrators. L. Dunoyer 217
 " " Oscillations in Luminous Vapours. R. Ladenburg 1677
 D₁ and D₂ Lines observed in Bunsen Flame, Structure of. K. I. Ivanov 1066
 D-lines, New Determination of Optical Parameters in Case of. K. I. Ivanov 1069
 " of Sodium, Excitation of Centres of Emission of. R. W. Wood and L. Dunoyer 1527
 " of Sodium, Ratio of Intensities of. R. W. Wood..... 1250
 " " " Repartition of Energy in. R. Ladenburg and F. Reiche 1529
 Displacements, Small, of Spectrum Lines, Measurement of. J. Evershed 854
 Electric Analogue of Zeeman-effect. A. Lo Surdo, A. Garbasso..... 666
 " " " F. Paschen and W. Gerlach 1534
 Electric and Magnetic Fields, Combined Effect of, on Spectrum Lines. J. Stark..... 1255
 " " " " , Effects of, on Spectra. N. Bohr ... 1070
 " Field, Effect of, on Spectrum Lines. J. Stark 238
 " " " " " " " " " E. Warburg..... 460
 " " " " " " " " " K. Schwarzschild..... 665
 " " " " " " " " " A. Garbasso 667
 " " " " " " " " " J. Stark and H. Kirschbaum 1071
 " Fields, effect of, on Spectrum Lines. O. M. Corbino..... 1419
 Emission Spectrum of Compound and its Spectrum in Solution. A. K. Chapman 1678
 Energy-Emission from Atom in Spectral Lines. H. Zahn..... 455
 "Flame Spectra," Uncondensed Spark for Production of. A. Harnack 1525
 Flames, Character of Luminous Metal Vapours in. H. Kohn 1555
 " , Spectroscopy of. A. Reis 465
 Gases, Dispersion of Light in, in Ultra-violet Region. J. Koch... 232, 233
 " , Distribution of Energy in Spectra of. H. L. P. Jolly 231
 " , Ultra-red Absorption of. E[va] v. Bahr 463
 Geissler Tubes : Spectra of Discharges in. R. W. Lawson 658
 " " ; Spectral Effects Produced. M. Millochau 1592
 Grating Apparatus, Rowland : Effect of Temperature. L. Grebe ... 844
 Helium and Hydrogen, Spectra of. E. J. Evans..... 225
 " " " " " " " " " N. Bohr and A. Fowler 226
 " Spectrum and Atomic Structure. J. W. Nicholson 1832
 " , Arc and Spark Spectra of. J. Stark..... 1532
 For the **Explanation** of this Index see p. 755.

Spectra, continued.

Helium, Kathode Spectrum of. P. G. Nutting.....	466
High-frequency Spectra and Atomic Structure. J. W. Nicholson ...	1246
" " " of Elements. II. H. J. G. Moseley ...	467, 1249
Hydrogen and Helium Spectra, and Bohr's Theory. J. W. Nicholson	1247
" Line, Red, Decomposition of. L. Puccianti	1060
" " , Theory of Electric Dispersion of. E. Gehrcke	1245
" Lines, Wave-lengths of. W. E. Curtis.....	1831
" , Electrodeless Spectra of. I. Masson	462
Indium and Gallium, Series in Spectra of. F. Paschen and K. Meissner	1243
Infra-red, Determination of Emissive Power in. M. Drecq	1412
Iodine, Resonance Spectra of, under High Dispersion. R. W. Wood	224
Iron Lines, Pressure-shift of. H. G. Gale and W. S. Adams.....	81
" Spectrum Lines, Wave-length of. K. Burns	80
" " , Standard Wave-lengths of. C. E. St. John and L. W. Ware	654
" , Arc Spectrum of. K. Burns.....	857
Kathodic Decomposition of First and Second Lines of Balmer's Series. L. Puccianti	1061
" Decomposition of Fourth Line of Balmer's Series. A. Lo Surdo	1059
Line Spectrum from Uncharged Molecules. C. D. Child.....	320
Lines, Spectrum, Complex Structure of. C. Wali-Mohammad.....	1252
Lithium Line, Red. T. Takamine and K. Yamada.....	1836
Luminous Vapours Distilled from the Arc. Spectrum Series. R. J. Strutt... ..	1533
Mercury, Green Line. J. C. McLennan and A. R. McLeod	1535
" , Resonance Line $\lambda 2536$, Excitation of. J. Franck and G. Hertz	1580
" Spectrum in Schumann Region. T. Lyman	236
" -vapour, Phosphorescence of. F. S. Phillips	470
" " , Resonance Radiation of. A. v. Malinowski ...	222, 1523
" , Cadmium and Zinc, Different Spectra of. J. de Kowalski	1065
Metallic Spectra with Tube-arc. A. S. King.....	235
Metals, Certain, Arc Spectra of, below $\lambda = 3200$. W. Huppers	79
" , Ultra-violet Spark Spectra of. J. M. Eder	76
Monochromatic Illumination, Spectrum Lines for. R. W. Wood ...	1063
Neon, Second Spectrum of. T. R. Merton	657
" , Series of Lines in the Spectrum of. R. Rossi	457
Neo-ytterbium, Ultra-violet Spectrum of. J. Blumenfeld and G. Urbain	1834
Nickel and Cobalt, Spark Spectra of, in Ultra-violet. L. and E. Bloch	1067
" , Arc Spectrum of, in International Units. S. Hamm	461
" , Spark Spectrum of, under Moderate Pressures. E. G. Bilham	1983
Nitrogen Bands, Effect of Self-induction on. E. P. Lewis	1833
" , Active, Spectrum of. E. P. Lewis	234
" , Line Spectrum of, in Geissler Tube. C. Porlezza.....	863
" , Positive Band Spectrum of. R. T. Birge	656
Origin of Spectra. R. J. Strutt	1072
Oscillatory Discharge in Gases, Spectrum of. R. Brunetti	1984
Oxygen Molecules, One-, Two-, and Three-atomed, U.V. Bands of. J. Stark.....	660
" , New Ultra-violet Absorption Spectrum of. L. and E. Bloch	1254
Phosphorescent Compounds, Energy-distribution in Spectra of. P. Borissow.....	469
Polar Spectra of Elements, Differences in. B. Reismann.....	1253
Praseodymium Compounds, Reflection Spectra of. P. Joye.....	453
Radiation of Gas Molecules excited by Light. R. W. Wood	1083
Residual Rays of Long Wave-length. H. Rubens and H. v. Wartenburg	693
Resonance Spectra, Polarisation of Light of. R. W. Wood	223

For the **Explanation** of this Index see p. 755.

Spectra, continued.

- Röntgen Rays, Wave-lengths of, *see* section Rays.
- Salts, Inorganic, Absorption of Light by. R. A. Houstoun, A. H. Gray, C. Cochrane.....70, 71, 72
- Selective Radiation from Various Substances. W. W. Coblentz 208
- Series Electrons, Speed of. J. Stark 1522
- " Spectra and Quantum Hypothesis. J. Stark 1416
- " , , Origin of. A. W. Conway 458
- Silicon, Elementary, Spectrum of. W. Crookes 1835
- Sodium Absorption Lines. C. Füchtbauer and C. Schell 229
- " Flame, Intense. R. W. Wood 1064
- " Vapour mixed with Neutral Gases, Absorption by. K. Fredenhagen 651
- " -vapour, Photometry of Resonance of. L. Dunoyer and R. W. Wood.....1239, 859
- " Vapour, Resonance of, for D-Light. L. Dunoyer..... 859
- " , , under Excitation of Single D-line. R. W. Wood and L. Dunoyer 1526
- Solar Spectrum, *see* section Astronomy.
- Solutions, Quantitative Investigation of Absorption Spectra of. H. C. Jones and J. S. Guy 862
- Spark Spectra of Elements in Extreme Ultra-violet. L. and E. Bloch 1420
- " , , Series Lines in. A. Fowler 1680
- " -Spectrum, Electric Conditions for Change from. P. Ludewig 228
- " Spectrum, New Method for Study of. C. de Watteville 1531
- Spectra, Laboratory, Registering Microphotometer for. A. S. King and P. P. Koch 1824
- Spectroscopic Apparatus, *see* section Apparatus.
- Standard Wave-lengths in Infra-red, Measurement of. H. Werner 1241
- Standards, Secondary, in Iron Arc Spectrum. H. Kayser, J. S. Ames, H. Buisson, and F. Paschen 856
- " , , Wave-length. L. Janicki 653
- " , , H. Vieffhaus 855
- Stark-Lo Surdo Phenomenon. A. Garbasso 1985
- Stellar Spectra, *see* section Astronomy.
- Strontium, Arc and Spark Spectra of. H. Hampe 1248
- Tin, Arc and Spark Spectra of. R. Arnolds 1068
- Titanium Furnace Spectrum, Variation of. A. S. King 1415
- Ultimate Lines of Elements in Different Sources. A. de Gramont... 1530
- Ultra-violet, Extreme, Extension of Spectrum in. T. Lyman 1244
- " Light, Absorption of, by Inorganic Salts. T. Ritschinsky 433
- " Lines. K. Wolff 239
- Water-vapour, Infra-red Absorption Spectrum of. A. Eucken 456
- Wave-length Measurements, Interferometric, in Infra-red. A. Ignatieff 1241
- Zecman-effect, *see* separate section.
- Zinc Spectrum Lines, Pressure Shift of. V. F. Swaim 1829
- " -vapour, Absorption Spectrum of. J. C. McLennan 1830
- Static and Atmospheric Electricity, *see also* sections Discharge and Radio-activity.**
- Adsorption of Ions by Falling Drops, etc. R. Lehnhardt..... 121
- Atmosphere, Electrical Conditions of, at Kew and in other Countries. G. Dobson 1438
- " , Free, Theory of Electrical Dispersion into. W. F. G. Swann 1703
- " , Natural and Artificial Electrification of. O. Lodge... 928
- Atmospheric Conductivity, Measurement of. W. F. G. Swann 1303
- " Electricity Observations made at Kew Observatory. G. Dobson 2006
- " Potential and Wireless Disturbances. G. Lutze 951
- " " Gradient around Leeds. D. W. Steuart and I. Jørgensen 1704
- For the **Explanation** of this Index *see* p. 755.

Static and Atmospheric Electricity, continued.

Atmospheric Potential Gradient, Normal; Sources of Disturbance.	
W. A. D. Rudge	1864
" Swann " " " , Theory as to Cause of. W. F. G.	516
" " " Results at Edinburgh during 1912. G. A.	
Carse and G. Shearer.....	1095
" " Precipitations, Electric Charge of. G. C. Simpson.....	710
Capacity Coefficients for Two Spherical Electrodes, Calculation of.	
A. Guillet and M. Aubert.....	122
Conductivity, Electrical, in Free Air up to 9000 m. A. Wigand.....	1096
Contact Electricity, <i>see</i> section Batteries, Primary.	
Electrification at Liquid-Gas Surfaces. H. A. McTaggart.....	958, 1863
" " of Water by Splashing and Spraying. J. J. Nolan ...	1702
" " Produced during Raising of Clouds of Dust. W. A.	
D. Rudge	1573
Emission of Electricity from Substances at High Temperatures.	
G. W. C. Kaye and W. F. Higgins	1707
Fall of Potential in Free Air up to 9000 m. E. Everling	1094
Lightning Rods, Protective Range of. J. Larmor and J. S. B. Larmor	1705
Pyro- and Piezo-electricity. E. Riecke.....	309
Rain, Electric Charge of. J. Elster and H. Geitel	929
" " " " of. F. Schindelhauer.....	930
Rotatory Field Phenomena in Electrostatic Alternating Field.	
E[mma] Becker	120
Thunderstorms, Note on Theory of. H. Nagaoka	1097
Two Spherical Conductors, Problem of. G. R. Dean	1093
Wind, Electric, New Form of. S. Ratner.....	927

Surface Tension.

Amorphous Bodies, Surface Tension of. B. Berggren	1210
Aqueous Solutions of Alcohols, Surface Tensions of. J. L. R. Morgan	
and M. Neidle	1016
Capillarity, Vaporisation, and Molecular Size. G. Jäger.....	397
Distribution of Colloidally Dissolved Substance over Two Layers.	
W. Reinders	1007
Drops and Globules, Liquid, Further Experiments with. C. R.	
Darling	1208
Drop-weights of Aqueous Solutions. J. L. R. Morgan and W. W.	
McKirahan.....	1012
" " of Solutions and Surface Tensions calculated from	
them. J. L. R. Morgan and G. A. Bole	186
Films, Liquid. W. Miehl	819
" " , Movements of. S. Mikola	820
Forces Acting on Sphere in Contact with Liquid Surface. A.	
Ferguson	181, 1656
Kinetic Theory of Surface Tension. E. Madelung	18
" " " " " " M. Born and R. Courant.....	19
Liquids in Contact with Different Gases, Surface Tensions of. A.	
Ferguson.....	1793
" " , Temperature-coefficients of Free Surface-energy of. F. M.	
Jaeger	1948
Mixtures, Surface Tension of. R. P. Worley	1164
Molten Hydrated Salts, Surface Tension of. J. L. R. Morgan and	
E. Schramm	1015
Organic Liquids, Surface Tensions and Capillary Constants of.	
J. L. R. Morgan and E. C. Stone	185
" " Liquids, Surface Tensions of. J. L. R. Morgan and P. M.	
Chazal	1013
" " Liquids, Surface Tensions of. J. L. R. Morgan and B. J.	
Kramer	1014
Platinum-water, Surface Tension. K. Tangl.....	602
Size of Drops, Variation of, with Frequency of Fall. P. Vaillant ...	1209

For the **Explanation** of this Index *see* p. 755.

Surface Tension, continued.

Soap Films, Surface Tension of. G. F. C. Searle.....	818
Spontaneous Alteration of Liquid Surfaces. C. Cloarec.....	598
Spreading and Edge-angle of Liquids on Solids. A. Pockels	597
Thin Layers on Water, Molecular Transformation of. H. Labrouste	817
Tube of Small Radius, Shape of Capillary Surface inside. A. Ferguson	1655
Water and Alcohol-Water Mixtures, Capillary Constants of. M. Reinhold	396

Temperature.

Black-body and Actual Temperatures. C. C. Bidwell.....	1563
" " True Temperatures for W, Ta, Mo, and C. C. E. Mendenhall and W. E. Forsythe	111
High-temperature Measurements based on Radiation. C. E. Mendenhall and W. E. Forsythe	1851
Temperature Scale between 0° and -193° C., Fixing. F. Henning	694
" Scales, <i>see also</i> section Thermometry.	

Temperatures, High and Low.

Expansion of Fused Quartz down to Temperature of Liquid Hydrogen. K. Scheel and W. Heuse.....	688
High Temperature, Methods of Heating Vapours to. K. Fredenhagen	692
" Temperatures, Change of Magnetisation in Iron and Nickel at. K. Honda and Y. Ogura	1133
" Temperatures, Electrical Conduction at. E. F. Northrup.....	1882
" " , Mineral and Rock Densities at. A. L. Day, R. B. Sosman, and J. C. Hostetter.....	375
" Temperatures, Thermal Conductivity of Granite and Basalt at. H. H. Poole	689
" Temperatures, Thermal Effects in Iron, Nickel, and Cobalt at. K. Honda	1892
" Temperatures, Thermo-calorimetric Investigations on Platinum at. O. M. Corbino	106
Liquid-air Temperature, Production of Luminescence by Kathode Rays at. E. Ohlon	241
" Hydrogen, Radiation of Radium at Temperature of. Mme. P. Curie and H. K. Onnes	96
Low and Ordinary Temperatures, Magnetic Properties of Chrome Steels at. M. B. Moir	1447
" Reduced Temperatures, Vapour Pressures of Substances at. H. K. Onnes and S. Weber.....	270
" Reduced Temperatures, Very, Vapour Pressures at. S. Weber	271
" Temperatures, Absorption of Gases by Charcoal at. G. Claude	1154
" " " Spectra at. A. Mazzucchelli	1679
" " " Heat Capacity of Metals at. E. H. Griffiths and E. Griffiths	1846
" Temperatures, Paramagnetism at. H. K. Onnes and E. Oosterhuis	163
" Temperatures, Specific Heats at. W. Nernst and F. Schwes	1084
" " " Susceptibility of Gaseous Oxygen at. H. K. Onnes and E. Oosterhuis.....	164
" Temperatures, Thermoelectric Behaviour of Metals at. G. Wietzel	1115
" Temperatures, Vapour Pressures and Thermometry at. H. v. Siemens	269
" Temperatures, Viscosity of Gases and its Temperature Variation at. H. Vogel.....	1187
Measurements, <i>see</i> separate section.	
P.D. Necessary for Electric Current through Mercury at 4'19° K. H. K. Onnes	330
Resistance of Tin, Sudden Disappearance of, and Superconducting State of Lead. H. K. Onnes	1121
Vapour Pressures of Hydrogen down to near Triple Point. H. K. Onnes and W. H. Keesom	108

For the **Explanation** of this Index *see* p. 755.

Terrestrial Magnetism and Electricity.

Atmospheric Electricity, <i>see</i> section Static Electricity.	
Declinations, Magnetic, obtained by "Carnegie." L. A. Bauer and W. J. Peters	1149
Disturbances, Magnetic, Time Measurements of. C. Chree	1905
Earth's Magnetic Elements, Appliances for Measurement of. L. A. Bauer	1621
" Magnetic Field; Determination of Horizontal Intensity. W. A. Jenkins.....	563
" Magnetism, Lunar Diurnal Variation of, at Pavlovsk. S. Chapman.....	2011
Magnetic Declination at Lyons, Perturbations of. P. Flajolet.....	760
" Disturbances and Pulsations, Propagation Velocity of. G. Angenheister	973
" Storms, Sun's Influence in. A. L. Cortie.....	167
Meteorology, <i>see</i> separate section.	
Non-cyclic Change. L. Steiner	1619
Terrestrial Magnetism and Phenomena of Sun-spots. C. Chree	349
" " , Diurnal Variation of. G. W. Walker	972
" " , Inequalities in Distribution of. P. Idrac.....	761
" " , Lunar Diurnal Variations of. S. Chapman...	350
" " , Moon's Influence on. S. Chapman	1903
27-day Period in Magnetic Phenomena. C. Chree	1904

Terrestrial Physics.

Absorption of Sun's Energy by Lakes. E. A. Birge	27
Deep-sea Deposits, Investigation of. J. Joly.....	1216
Earth, Cooling of. A. Véronnet	1218
" , Measurement of Rigidity of. A. A. Michelson.....	1038
" , "Pseudo-istropic," Conduction of Heat in. A. v. Anderkó...	405
Earthquakes, Axial Variations in Earth as Cause of. A. Spitaler.....	30
" , Barometric Gradient as Secondary Cause of. K. Hasegawa	406
Earth's Atmosphere; Action of Gravity on Gaseous Mixtures. G. Gouy.....	1215
" Elastic Properties, Experimental Determination of. H. G. Gale	1495
" Interior Seismological Evidence regarding. B. Gutenberg	824
Floods of 1913 in Ohio Valley. A. J. Henry	1494
Glacier, Hintereis. R. M. Deeley and P. H. Parr.....	611
Gulf Stream. M. W. C. Hepworth	1493
Helium in Coal-mine Gas. C. Moureu and A. Lepape	889
Lava, Determination of Melting or Solidifying Range of. K. Fuji and T. Mizoguchi	1276
Magmatic Gases and Water. A. L. Day and E. S. Shepherd	26
Microseismic Motion. W. Pechau	1214
" Periods. C. Mainka	821
Ocean Temperatures along West Coast of North America. G. F. McEwen	29
" Temperatures in Vicinity of Icebergs. C. W. Waidner, H. C. Dickinson, and J. J. Crowe.....	1951
" , North Atlantic, Recent Physical Investigations in	1805
Oceans and Continents, Primitive, Formation of. E. Belot	823, 1496
Ozone in Upper Atmosphere, Occurrence of. J. N. Pring	1217
Rocks, Fractured, Mean Density of. G. F. Becker.....	1784
Seiches of Lake Towada	1667
" , Thunderstorms as Cause of. T. Okada, S. Fujiwhara, and S. Maeda	822
Seismic Movements, General Distribution of. de M. de Ballore	612
Solar Heat, Cause of. A. Véronnet	1954
" Radiation. F. W. Very	404
Sunlight, Absorption and Polarisation of. A. Boutaric	407
Terrestrial Radiation, Transmission of, by Atmosphere. F. W. Very	1800

For the **Explanation** of this Index *see* p. 755.

Terrestrial Physics, continued.

Tides, Canadian, Secondary Undulations of. K. Honda and W. B. Dawson	1804
" , Mediterranean, Theory of. R. v. Sterneek.....	28
Vulcanism; Capillarity in Rocks. J. Johnston and L. H. Adams ...	1952

Thermo-Electricity and Thermo-Magnetism.

Bad Conductors, Thermoelectric Forces of. A. Weissenberger	738
Bismuth Thermopiles. W. W. Coblentz	737
Calibration Tables for Thermo-elements. L. H. Adams	1117
Carbon and Graphite, Thermo-junction of. C. C. Bidwell	1602
Deformation, Thermoelectric Forces produced by. K. Baedeker and W. Vehrings.....	1729
E.M.F. between Portions of Same Metal at Different Temperatures. H. Hörig.....	1603
" due to Temperature Gradient in Metal. H. Hörig.....	1116
Iron-Carbon Alloys: Influence of Various Metals on Thermoelectric Properties. E. L. Dupuy and A. Portevin	736
Low Temperatures, Thermoelectric Behaviour of Metals at. G. Wietzel	1115
Measurements, <i>see</i> separate section.	
Oxides, Metallic, Thermal E.M.F. between Metals and. S. L. Brown	1119
" , Thermal Electromotive Forces in. C. C. Bidwell.....	1118
Peltier and Thomson Effects, and Thermomagnetic Effect, for Variable Conductors. G. Gottstein	1120
" -effect at High Temperatures. P. Cermak	957
" " between Metals and Electrolytes, Measure of. G. Guglielmo	1317
Selenium-Antimony Mixtures, Thermoelectric Properties of. H. Pelabon	1604
Steel, Tempered, Electric Properties of. U. Bordoni.....	156
Strained Wires, Thermoelectrics of. J. M'Whan.....	1607
Thermo-couples, Base Metal. O. L. Kowalke	1114
" -electromotive Force. C. Dannecker	956
Thermomagnetic Effect, Theory of. H. Zahn	556, 1862
" Potential Difference, Longitudinal. A. W. Smith	554
" Properties of some Elements. K. Honda and T. Soné.....	1897
" Property of Magnetite. H. Takagi.....	1896
Tin Selenides, Thermoelectric Power of. H. Pelabon	1605

Thermodynamics, *see also* section Gases.

Absolute Zero Entropy-changes on Mixing. W. H. Keesom	908
Black-body Radiation. G. W. Walker	705, 1287
Boltzmann Theorem and Energy Quanta. P. Ehrenfest	912
Brownian Movements in Radiation Field. A. D. Fokker	700
Chemical Equilibrium, <i>see also</i> separate section.	
Critical State and Theory of Continuity. I. Traube	1020
Cyclic Processes between Infinite Neighbouring Isotherms. K. v. Wesendonk.....	1288
Entropy and Probability, Boltzmann's Principle of. K. F. Herzfeld	505
Equation of State, Canonical, for Solids. K. Eisenmann.....	701
" " " of Ideal Monatomic Gas according to Quantum Theory. W. H. Keesom.....	288
" of State, Derivation of Canonical Form of. A. Wassmuth	915
" " " , Diagram of State, and Association Hypothesis. L. Schames.....	1019
Equilibrium-diagram of Water. G. Tammann.....	109
" , Thermodynamic. I. Bródy	1435
Formulae, Thermodynamic, Tables of. P. W. Bridgman	1285
Gas Theory. A. Rosenthal.....	1552
Internal Pressures of Liquids. A. P. Mathews.....	279
Kinetic Theory of Perfect Gases. E. Bouty.....	911
Liquids, Properties of, as Functions of Critical Constants. J. Kendall	1009

For the **Explanation** of this Index *see* p. 755.

Thermodynamics, continued.

Partition of Energy. J. D. van der Waals.....	284
" " " J. D. van der Waals, Jr.	1695
Phase Diagram of Eleven Substances with Reference to Melting Curve. P. W. Bridgman	1630
Planck's Law of Distribution of Energy, Deduction of. C. Benedicks	113
" Radiation Theory and Undamped Vibrations. C. W. Oseen	914
Quanta Theory of Gases. M. Planck	702
Quantity <i>b</i> , Significance of, in Equation of van der Waals. T. W. Richards	1469
Quantum Effect in Monatomic Gases and Liquids. A. Eucken	1434
" Theory and Radiation. J. Duclaux	1551
Radiation Formulæ. M. Wolfke	1291
" Law, Stefan, Constant of. W. H. Westphal	289
" " The Constant in. E. Bauer	508
" of Gases. L. Zehnder	507
" , Natural, from Gas. G. Green	1433
" , Thermodynamics of. H. L. Callendar	1550
Relations between Dilatational and Thermodynamical Coefficients. T. Peczkalski	504
" between Elastic and Thermal Constants of Solid Elements. C. E. Blom	699
Rotation Energy of Diatomic Gas on Quantum Hypothesis. E. Holm	503
Solids in Liquids, Thermodynamics of. W. Nernst	502
Thermodynamic Potential as Kinetic Quantity. H. Hulshof	1927
Thermodynamics. K. v. Wesendonk	506
Unity of all Substances in their Thermal Behaviour. J. J. van Laar.....	1284, 1553, 2004
Van der Waals' Equation and Nernst's Theorem. L. Schames	1548
" " " " , Experimental Modification of. J. P. Dalton	2003
Water, Relation of Volume-surfaces to Polymorphism of. G. Tammann	287
" , Reversible Adiabatic Expansion of. J. R. Roebuck	273
Wien's Displacement Law. W. H. Westphal	698
" Law. R. Hargreaves.....	1289
" Radiation Formula from Assumption of Independent Light Quanta. G. Krutkow	909
Work done in Formation of Surface Transition Layer. R. D. Kleeman	1926

Thermometry, Pyrometry, and Calorimetry.

Black-body and True Temperatures for W, Ta, Mo, and C. C. E. Mendenhall and W. E. Forsythe	111
" Temperatures, Actual, and. C. C. Bidwell.....	1563
Calorimetry, Thermoelectric Measurements for. W. P. White	2008
Exposed Stem Correction for Mercury Thermometers. G. Dimmer	495
Freezing-point of Benzene as Fixed Point. T. W. Richards and J. W. Shipley	1850
High-temperature Measurements based on Radiation. C. E. Mendenhall and W. E. Forsythe	1851
Ice Calorimeter. Constancy of Density of Ice. E. Griffiths.....	895
Low Temperatures, Vapour Pressures and Thermometry at. H. v. Siemens	269
Pyrometer, Féry Radiation, New Method of Using. G. Millochau	1556
" , Holborn-Kurlbaum, Use of Light-filters with. M. v. Pirani	498
" , Optical, Leonard Weber's Photometer as. A. Repiewa	1562
Radiometry, Instruments and Methods used in. W. W. Coblentz ...	695
Resistance Thermometer, New Calorimetric. H. C. Dickinson and E. F. Mueller.....	893
Sulphur, Boiling-point of, on Thermodynamic Scale. E. Eumorfopoulos	1277

For the **Explanation** of this Index see p. 755.

Thermometry, Pyrometry, and Calorimetry, *continued*.

Temperature Scale, Fixing, between 0° and -193°C . F. Henning	694
Thermo-calorimetric Investigations on Platinum at High Temperatures. O. M. Corbino	106
Thermometers, Calibration of, by Floating Equilibrium. T. W. Richards and J. W. Shipley	892
Transition Temperatures of Hydrates of Sodium Carbonate as Fixed Points. T. W. Richards and A. H. Fiske	1085

Vapour Pressure.

Amalgams, Silver, Gold, and Bismuth, Vapour Pressures of. E. D. Eastman and J. H. Hildebrand	1998
Argon, Liquid and Solid, Vapour Pressure of, down to -206° . C. A. Crommelin	272
" Solid, New Determination of Vapour Pressures of. C. A. Crommelin	2001
Carbon Compounds, Vapour Pressures of. A. Schulze	501
" Dioxide, Vapour Pressures of, between -160°C . and -183°C . H. K. Onnes and S. Weber	270
" Dioxide, Vapour Pressure of, from -140° to about 160° . S. Weber	271
Exact Method for Calculating Vapour Pressure. I. W. Cederberg	1694
General Comparison of Vapour Pressures. J. M. Crafts	500
Hydrogen, Vapour Pressures of, down to near Triple Point. H. K. Onnes and W. H. Keesom	108
Nitrogen Peroxide, Vapour Pressure of. A. C. G. Egerton	1283
Oxygen, Vapour Pressure of. F. E. E. Germann	274
Phosphorus System, Vapour Pressure Lines of. A. Smits, S. C. Bokhorst, and J. W. Terwen	1554
Tungsten, Metallic, Vapour Pressure of. I. Langmuir	907
Vapour Pressure of Water at 24.97° . I. H. Derby, F. Daniels, and F. C. Gutsche	1853
" Pressure and Thermometry at Low Temperatures. H. v. Siemens	269

Viscosity.

Calcium Chloride Solutions, Viscosity of. F. Simeon	1021
Colloidal State, Importance of Viscosity for Study of. W. Ostwald	363
Determination of Viscosity. M. P. Appleby	1357
Flow of Air through Capillary Tubes. I. M. Rapp	387
Gases, Motion of, in Capillary Tubes. R. Holm	1188
" Viscosity of, at Low Temperatures. H. Vogel	1187
Gas-mixtures, Viscosity of. J. P. Kuenen	1432
Liquids, Viscosity of, under High Pressure. O. Faust	816
Molten Metals and Alloys, Determination of Viscosity of. R. Arpi	596
Solutions, Electrolytic, Viscosity of. C. A. Kraus	1355
Vapours of Volatile Liquids, Viscosity of. A. O. Rankine	360
Water, Undercooled, Viscosity of. G. F. White and R. H. Twining	798

Vision.

Colour-blind Observer, Luminosity Curve of. W. Watson	650
" Vision, Abnormal Trichromatic. W. de W. Abney and W. Watson	446
" Vision, Abnormal, Types of. L. Bell	1520
" " Anomalous Trichromatic. W. Watson	1675
Eye, Human, Axial Chromatic Aberration of. P. G. Nutting	1671
Glass, Eye-preserving, for Spectacles, Preparation of. W. Crookes	839
Intermittent Vision. A. Mallock	648
" " S. P. Thompson	1670
Visual Sensation caused by Magnetic Field. C. E. Magnusson and H. C. Stevens	1906
Zeeman-effect, <i>see</i> separate section.	

For the **Explanation** of this Index see p. 755.

The Gresham Press

UNWIN BROTHERS, LIMITED

WOKING AND LONDON